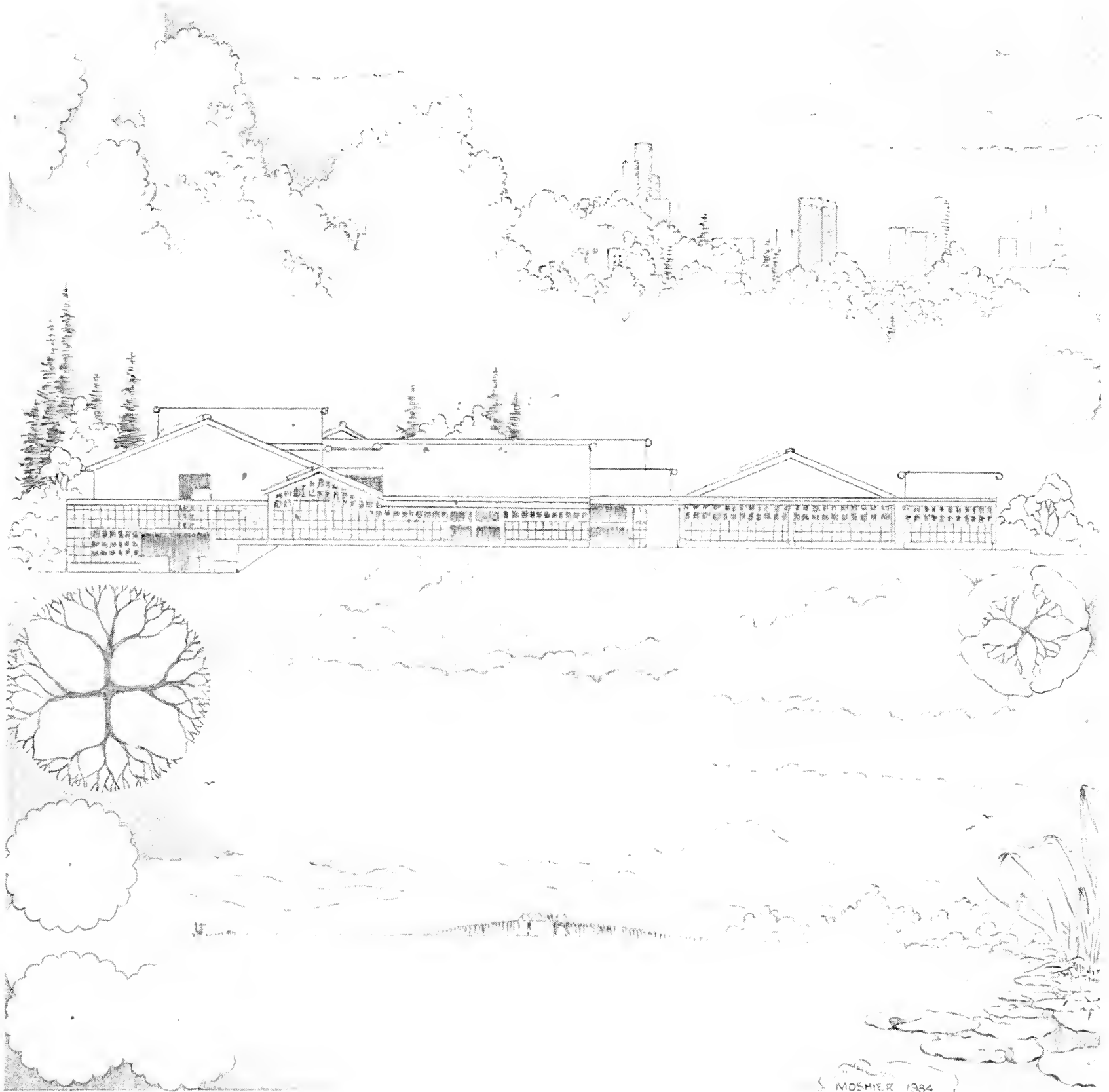


Horticulture Northwest

Journal of the Northwest Ornamental Horticultural Society



Volume 11

Number 3

Fall 1984

Horticulture Northwest is published quarterly by the Northwest Ornamental Horticultural Society. Yearly membership dues start at \$15.00. Address communications regarding membership to:

Membership Chairman, Vernetta Cunningham
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University of Washington Arboreta
Seattle, Washington 98195

We welcome original articles, artwork and black and white photographs from contributors. Back issues of the Journal are available to members at \$2.50 each.

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Horticulture Northwest

Volume 11 Number 3
Fall 1984

Sallie D. Allen, Editor

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Cover Illustration

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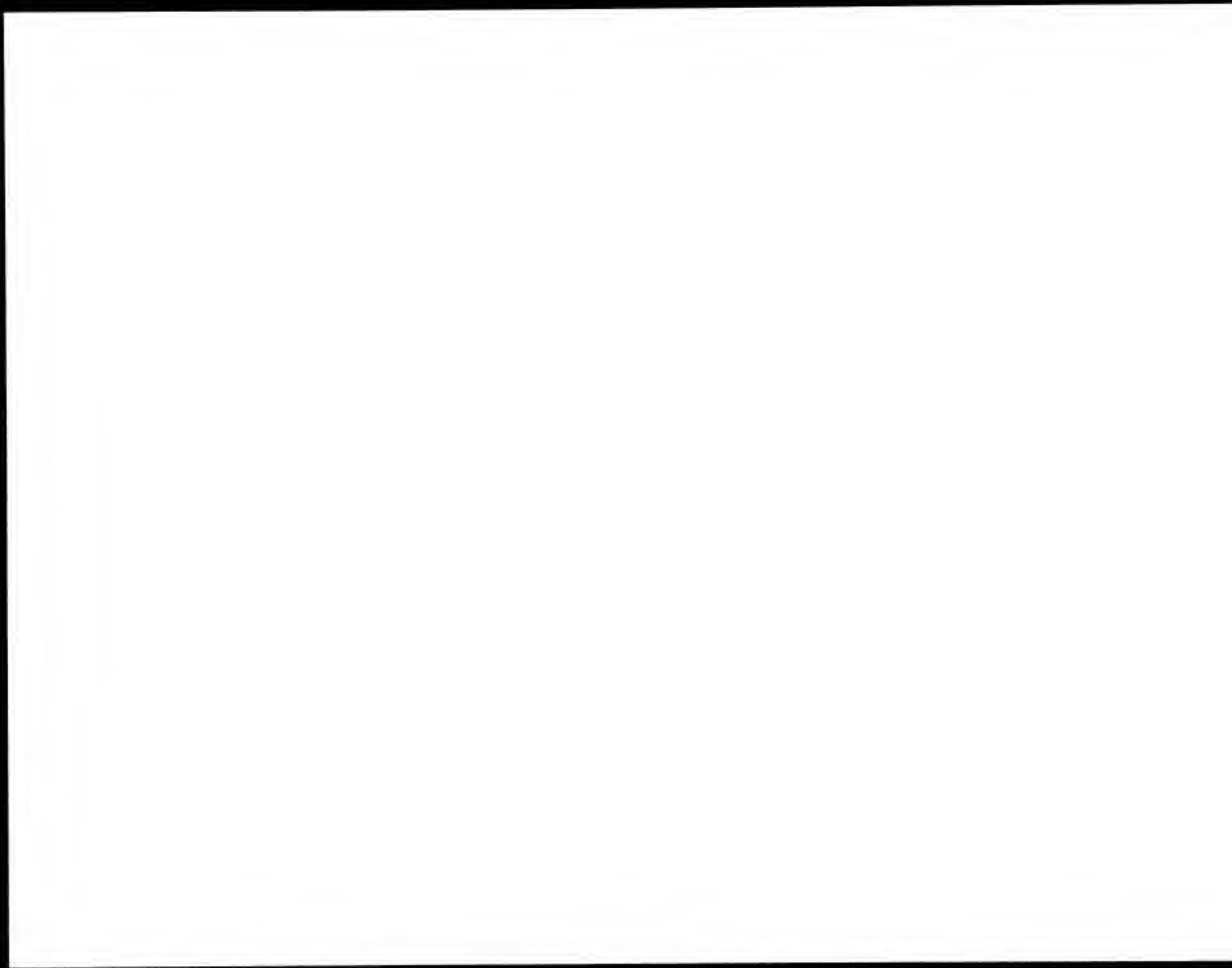
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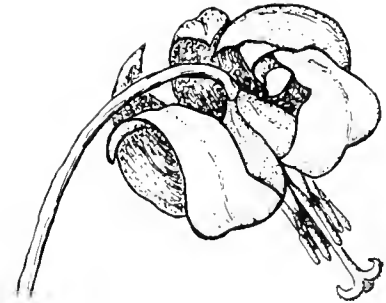
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EDITORIAL

Fig. 1



Last fall at Union Bay we were gathered together, friends who have worked together for years, at a festive ground-breaking ceremony for the first of three buildings for the pioneering Center for Urban Horticulture. We were not there to celebrate the culmination of all of our efforts, but to share the excitement of a bright new beginning for this center, under the leadership of our remarkable Director, Dr. Harold B. Tukey, Jr. It was apparent at that time that there would be a grand opening within a year (Harold Tukey is a mover of mountains!). NOHS has been dedicated to this project for many years, would be strongly involved in the festivities, so it would be only appropriate that the entire Fall issue of Horticulture Northwest be devoted to the history of the NOHS and the Center for Urban Horticulture. There were three purposes for this publication: A documented history of the NOHS; an opportunity for long-time members to recall and new ones to learn what this organization was all about, and feel pride in their membership in this gutsy little Horticultural Society; and this could also be a valuable resource for Dr. Tukey.

This proposed publication brought an enthusiastic reaction from Dr. Tukey, a year ago, and his willingness to be a working member of the planning and editorial committee made the whole undertaking seem possible. Added to this committee were Grant Jones, Dean James R. Bethel, Dr. Charles E. Odegard and Micheal Moshier. The NOHS Board gave its full support, so in January of 1984 the research began in earnest. It was a joy to go back on our University of Washington campus, beautiful even in late March, interviewing old friends in education and administration, recalling together those shared experiences, both serious and humorous. It was gratifying to hear how highly the NOHS was respected there, and how each of these leaders in the field of higher education, in his own unique way, expressed with conviction, the same thought... "If it had not been for the NOHS, its leadership and dedication, there would be no Center for Urban Horticulture, no Arboretum... they must be given the appropriate credit for the strong role they have played."

Dean Bethel wisely observed, "Out of controversy comes opportunity." Out of one Arboretum controversy, NOHS was founded, out of that and others, the University was forced to look within its own properties to find an alternative, a piece of land owned and controlled by them, and they did find 55 acres within urban Seattle, conveniently located within walking distance of the University of Washington campus and just across Union Bay from the Washington Park Arboretum.

This project has been challenging and fun, renewing old friendships, talking to people who were there and enjoyed sharing their remembering. The dozens of documented reports, site plans, master plans, comprehensive plans, Arboretum master plans, copies of all articles from our publications decorating my living and dining room tables the past six months, will soon be filed away. But the positive people, events and humorous situations will never be forgotten.

In the history of botany and horticulture of the Pacific Northwest, there is one person who has gently left a deeper mark of influence than anyone else, on the lives of people of all ages. It is to him, our good friend, Joe Witt, that we dedicate this special celebration issue of Horticulture Northwest... In Loving Memory.

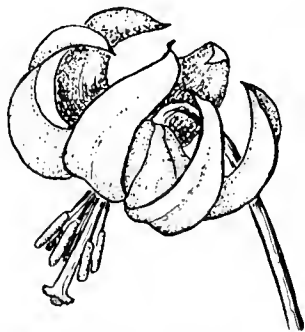


Fig. 2

Fig. 1 *Erythronium revolutum*Fig. 2 *E. californicum*

Sallie D. Allen

Jean Witt

An Historical Footnote

Charles E. Odegaard

President, University of Washington (1958-1973)

During the 1960's, the University administration received, on several occasions, proposals from faculty sources looking toward the possibility of expanded scientific and teaching activity in ornamental horticulture in an urban setting to take advantage of the unusual opportunities offered by nature in the Puget Sound area in general and presumably in particular in what was called the University of Washington Arboretum. Such a program, entailing expanded participation by faculty from several departments, could not take place without increased control by the University of Washington over the Arboretum as a laboratory, over both its growing areas and over the physical facilities to be built in the Arboretum. Expectations of the other parties associated with the Arboretum were to prove deterrents to the development by the University of an expanded, university-controlled scientific and teaching program.

The site of the University of Washington Arboretum had been leased in December 1934 to the University of Washington by the City of Seattle, and the City had agreed "to use such funds as it may have available for the establishment of said Arboretum, and to cooperate with second party [U. of W.] in the establishment and maintenance of said Arboretum and botanical garden and, to that end, to donate such seeds, plants, shrubs, trees, equipment and lawn as may be possible." By the 1960's, however, the city was clearly under increasing pressure from many citizens now surrounded by heavy urban development to view the green area of the Arboretum primarily as a city park suitable for increased use for many kinds of recreational purposes, often not compatible with a controlled environment for an Arboretum and botanical garden. Indeed, by 1969 the university officer with overall responsibility for the Arboretum appealed to me for additional police protection because of activities involving vandalism and stealing, and even vicious personal attacks on people including the Director of the Arboretum, Brian Mulligan, who was the victim of an armed robbery attack. While additional security might diminish personal attacks, the openness of the Arboretum consistent with the park use made difficult the protection of many plantings from pilfering and outright destruction.

The second party much involved with the Arboretum was the Arboretum Foundation, a private association, which over the years through plant sales and other fundraising programs had conducted its own events and educational outreach programs related to the Arboretum and had contributed to various plantings within the Arboretum. By the 1960's, its leadership had developed an interest in building a large Floral Hall within the Arboretum suitable for an annual rhododendron show. The Foundation's annual contribution to the University of Washington for its use in the Arboretum was a small part of the funds it raised for its own programs and activities.

A serious policy difference developed over the matter of physical facilities for the Arboretum between the Arboretum Foundation and the University's representatives. The former advocated the building of a large floral hall as exhibit space for a show such as the rhododendron show. The latter accepted the idea of a small exhibit space, but not the large structure whose use would entail substantial crowds in the Arboretum and attendant parking problems and vehicular traffic damaging to the Arboretum.

Some persons within the Arboretum Foundation, sympathetic to the plans of the University for an expanded program of research and teaching in urban horticulture, and willing to collect and make contributions directly to the University for this expanded purpose, in March 1966 formed a new organization, the Friends of the University of Washington Arboretum, Inc. (later changed to Northwest Ornamental Horticultural Society). Through plant sales and other fundraising efforts they acquired funds which have been distributed directly to the University of Washington.

By 1971, it was clear that progress at the University in urban horticulture could not take place without a resolution as to the status of the Arboretum in Washington Park. As a last effort to clear the way for reliance on the Washington Park site as the principal location for a university-controlled area, I supported the proposal that the area be divided into two parts, a fenced area around the eastern and upper side which would be the Arboretum under direct management by the University of Washington, and a lower, western and northern area, which would be unfenced and recognized as a park under the direct management of the City.

After I left the President's office on September 30, 1973, it became clear that this proposal was unacceptable to the city. Transference of the University's primary interest to a new site north of the canal on its own property finally opened the way for the long-desired expansion in the University's involvement in the science of, and teaching about, urban horticulture.



Fig. 2 a. *Cassiope hypnoides* (natural size)
b. fruit c. flower x 4

Sally Dickman

FOUNDERS OF THE NOHS: PLANTSWOMEN ALL

Compiled by Sallie D. Allen

On March 15, 1966, the 15 founding members of the NOHS formed a non-profit, non-stock corporation under the name of the Friends of the University of Washington Arboretum, Inc. The history of the founding of this organization, the early years and the eventual name change to the Northwest Ornamental Horticultural Society on July 30, 1973 will be related in the pages that follow. Just who were these founders? What was their expertise within the horticultural community? How have they served over the years and how are they now serving in 1984 in this or other related organizations? Simply, these 15 dedicated plantswomen, all experts within their own horticultural specialty, formed the majority of the members of the 1965 Arboretum Foundation Plant Sale Committee. Thumbnail sketches of your founders appear in the order in which they signed the original Certificate of Organization. The Bylaws of the corporation provided for a revolving board where each trustee might serve two three-year terms, then retire from the board for a period of one year, before again serving if elected.

Elisabeth C. Miller: 1965 Plant Sale Consultant; served as President
President & Trustee three additional years; lecturer, writer,
responsible for many large civic beautification
projects in which she was a pioneering influence; her four-acre,
intensively landscaped garden is one of the finest in the country;
initiated and Chairman, Horticultural Education Fund; 1984 Co-chairman of
Preview Celebration Dinner for the grand opening of the Center for Urban
Horticulture, NOHS board advisor.

Elizabeth C. Madison: 1965 Assistant Plant Sale Chairman and Chairman of
Vice Pres. & Trustee the Rare Bulb Department; served NOHS in many
capacities, Plant Sale Chairman three times;
lecturer, expertise--bulbs, rhododendrons, bonsai, alpiners; 1984 Trustee,
Plant Sale Bonsai Committee.

Sallie D. Allen: 1965 Collector's Corner Chairman to the present
Secretary-Treas. time; served NOHS as Trustee, as President (two
years); initiated and edited NOHS Newsletter,
Editor, Horticulture Northwest; professional lecturer, writer; expertise--
Ericaceae and rare shrubs, natives, alpiners, Collector's garden of
international reputation (tours provided); Heathwood Cottage Nursery; 1984
Trustee, Collector's Corner Chairman.

Mareen S. Kruckeberg: 1965 Trees and Shrubs Department, and for many years
Trustee worked there and in Fern Department; professional
artist, botanical drawings; expertise--trees,
shrubs, natives, ferns; MSK Rare Plant Nursery; outstanding four-acre
botanic garden, with lecture-tours provided; 1984 Trustee.

Virginia S. Anderson: 1965 Plant Sale Chairman; special knowledge
Trustee Ericaceae, rare plants and bulbs; served as Trustee
and Plant Sale Committee until her death in 1971.

- Helen M. O'Brube: 1965 Rhododendron Department; served in many capacities, Plant Sale Committee, Trustee until retirement; expertise rhododendrons.
- Charlotte E. Ross: 1965 Assistant Plant Sale Chairman, worked on sale each year up to present time; served as Trustee a number of times; NOHS Historian.
- Martha Jane Trosper: 1965 Trees and Shrubs Department Chairman and for many years served NOHS as horticultural consultant; organized gardening groups of young mothers, encouraged and taught them the art and joy of gardening; deceased 1977.
- Dorothy C. Hussey: 1965 Horticultural Consultant; Plant Sale Committee Trustee every year; served as Chairman of Landscape Committee for the Governor's Mansion; Plant Sale Chairman; Landscape Architect with expertise trees, shrubs, groundcovers, rhododendrons; 1984 Plant Sale Consultant and Trees and Shrubs Department.
- Dorothy B. Brauss: 1965 Groundcovers Department Chairman; Plant Sale Trustee Committee every year; Chairman, Ericaceae display for International Botanical Congress (1969) and for Ornamental Plants display and publication for American Horticultural Society Congress (1972); 1984 Plant Sale Lists and Research.
- Helen Jean Wilcox: 1965 Chairman in charge of finance and cashiers; Trustee served as Treasurer (three times), President (two years); Memorials Chairman; Plant Sale Chairman (three times); 1984 Trustee and Plant Sale Chairman.



Fig. 3 *Arctostaphylos columbiana*
Mareen S. Kruckeberg

Ruth Ellerbeck: 1965 Trees and Shrubs Department; served on Plant
Trustee Sale Committee many years; has contributed to the
plant sale each year, beautifully grown choice plant
material from her garden, and worked on all sales.

Dorothy M. Metheny: 1965 Heather Department Chairman; served as
Trustee Treasurer; lecturer; founding member of the Pacific
Northwest Heather Society; Editor and primary
contributor to the Heather News; the outstanding collection of heather
species and hybrids within a private garden in the Pacific Northwest.

Elizabeth H. Baker: 1965 Trees and Shrubs Department; served NOHS in
Trustee many capacities; Plant Sale Committee many times;
expertise ferns, trees, shrubs, rhododendrons;
presented propagating classes until retirement.

Isabel Pierce: 1965 Rhododendron Department and Plant Sale
Trustee Committee for many years; served NOHS in many
capacities, President (two years); expertise
rhododendrons; one of the finest rhododendron gardens in the country,
generously open to group tours at special seasons and to individuals;
active in NOHS until her death in 1982.

Although technically not listed as founders, two people for obvious
reasons could not appear within the legal documents, although they were
working with us tirelessly from the beginning. They must be acknowledged
and rightfully credited for their strong contributions in this history of
the NOHS.

Margaret Mulligan: 1965 Assistant Chairman, Groundcover Department;
served NOHS in many capacities over the years,
trustee, lecturer, writer, Plant Sale Committee nearly every year,
expertise Ericaceae, rare and unusual woody plants, bulbs, ferns; 1984
Trustee, Plant Sale List and Research. In 1980, Margaret Mulligan's name
was appropriately added to our list of founders.

James H. Madison: Contributed countless hours of his legal expertise
as our official attorney for many years, initially
preparing all legal documents; advised and formulated our first Bylaws,
supported enthusiastically every activity of our organization until his
death in 1981. He was our good friend and beloved by us all.

These, your founders, had a special relationship, a strong friendship,
one for the other, and they shared a deep love of the Arboretum. They
enjoyed working hard together in support of it, in any capacity that was
needed, whether plant sales, as docents or teaching classes to spread the
joy and enthusiasm for the knowing and growing of fine plants. They all
had outstanding gardens, of varying sizes, uniquely personal, encompassing
the special interest or expertise of each individual. They all contributed
generously from their gardens by propagating their rarities, not only to
earn money through our sales, but they were all intensely interested in
education, and wanted to introduce new and exciting plant material, native
and exotic, to Pacific Northwest gardeners.



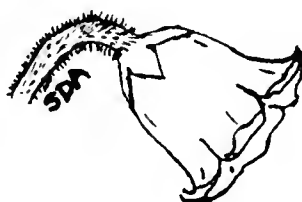
I REMEMBER

Sallie D. Allen, Seattle, Washington

Our University of Washington Arboretum, during its fifty-year history, has always created deep emotions within its supporters, whether individuals viewed it from the standpoint of true plantspeople with a genuine appreciation for its valuable collections of woody plants, or solely as a magnificent in-city sanctuary, where beauty, color, fragrance and tranquility could be enjoyed by anyone of any age during any season. Regardless of philosophy, all who spent many hours working in any way possible to assist the fine underpaid, overworked Arboretum staff, as docents, weeding, keeping records, manning phones, seed collecting or fund raising, all shared in this emotion. It was THEIR Arboretum in which they had a working partnership in its very existence, and great dreams for its future as a valuable asset not only to the Seattle community, but to the Pacific Northwest and the entire state of Washington. Thus, the supporters were not restricted to Seattle residents alone, but from all parts of western Washington.

The 15 founders of this organization were not merely a group of vocal dissidents, so prevalent in the 60's and 70's, but strong contributing members of the Arboretum Foundation. Six of them through the Ericaceae Study Group, Unit 60, planned and presented a lecture series of classes, "Ericaceous Plants for Northwest Gardens", in 1964, and in 1965 prepared a 42-page book under the same title which is still the most comprehensive publication on the Ericaceae Family to be found anywhere, still being sold at the Arboretum by the Foundation. The remainder of the founders were also strong contributors to the before-mentioned work of the Arboretum as well as all making up the majority of the members of the 1965 Plant Sale Committee.

This committee was invited to attend the Foundation Unit Council meeting immediately following the sale, all anxious to hear the results of their efforts, \$10,000 (an enormous amount by 1965 standards), the largest proceeds earned in the history of Arboretum plant sales. During the course of the meeting, our Director, Mr. Brian Mulligan, gave his traditional Arboretum report, requesting a much-needed Cushman Truckster at a cost of \$2,200. He was flatly refused on the grounds that there was no money available for it. We were astounded at the refusal and the off-hand treatment of our Director whom we all deeply respected. Our desire was for our hard-earned money to go toward much-needed books for the reference library, to heavy equipment and, in fact, to the hiring of labor as needed and determined by our Director. Our opinions fell on deaf ears.



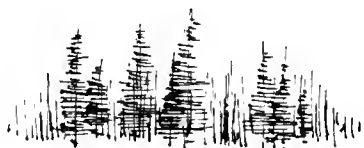
As a result, Virginia Anderson, our Plant Sale Chairman, called a preliminary meeting of her entire committee to discuss the problem; and meetings we had, week after week, doing our homework on the inner workings of the Arboretum Foundation. Others were invited to share in our deliberations; most were sympathetic and joined with us at a later date. The fact remained that we still did not know whether the money was going to support the supporting group or into the sacred bank account for Floral Hall; also, no money, we discovered, from the 1963 or 1964 sales which we had all worked hard to make happen, had gone to the Arboretum.

There was indeed controversy, strong minds, strong opinions, emotional debates and hot words exchanged in public meetings, private meetings, group meetings involving University administration, officers in the Foundation, Arboretum staff and this handful of mavericks who dared to rock the establishment boat, causing great discomfort to many people, friends and opponents alike. The meetings continued and it became abundantly clear that the strong differences of opinion were in fact diametrically opposed basic philosophies, and no matter how hard everyone tried, there could be no meeting of the minds, no compromise.

Although there were many issues, the basic important points of conflict were:

1. We knew that the annual fund-raising activity advertised as the Arboretum Plant Sale should have the proceeds go directly to our Director, for Arboretum purposes as determined by him; and he should be treated with the respect that he so richly deserves;
2. The Arboretum should in fact be under the direct control of the University of Washington, not the Foundation or any other supporting group;
3. We were adamantly opposed to Floral Hall, enormous in its size and the necessary parking facilities to accommodate major horticultural shows, further eroding our fragile Arboretum, part of which had been condemned for a bridge complex on its northern boundary and threatened by the six-lane divided state expressway 522 (the R. H. Thompson) on the west;
4. Every Foundation member is entitled to have full access to the organizations' financial report and a revolving board was essential. An ingrown, closed corporation was unacceptable.

When all else failed 15 individually written letters of resignation were presented to the governing board at the next Arboretum Foundation meeting. We went ahead with our plan to form a new organization, a non-stock, non-profit corporation, The Friends of the University of Washington, Arboretum, Inc., which became a reality March 15, 1966. As with the beginning of any new organization, officers are needed, though no election was held. We were volunteered for the job! Betty Miller, President; Betty Madison, Vice-President; and I as Secretary-Treasurer. Jean Wilcox, shortly thereafter, took over the duties of Treasurer.



A letter of intent, which spelled out beyond a shadow of a doubt what we were doing and why, was sent to key people in University administration, officers of the Foundation and Unit Council, and Chairman of each individual Unit (Unit 60 was naturally dissolved; we were all "Friends"). Letters were also sent to our contacts within horticultural organizations in which we were individually active and serving in leadership capacities. Our action understandably caused an explosion resulting in heated debates within the membership of the recipients; of grave concern was our plan to hold our own plant sale that Fall at the University Village, in competition with the Foundation... one week earlier.



Right up until the day of our sale, the Fall of 1966, every effort was being made by everyone to reunite the two organizations into a single cooperative sale to bridge the widening gap; however, none of our conditions would be met. In addition, we strongly believed that the Pacific Northwest, with its tremendous interest in horticulture of every description, was large enough to support two supporting groups. In fact, two groups were essential for the growth and vital health of the Arboretum and a public awareness of its needs. Each group had much to offer in numbers and talent, each could comfortably work within its bylaws, follow its special interests, provide greater services and much-needed funds would be forthcoming in far greater amounts.

Our plant sales have always been the main event in the years' activities, where members who could not participate in anything else came out to work, not only to contribute their time, but to join with the planning committee, to work together, learning new things about new plants and having great fun in the process. Also working with us were busy, keen nurserymen and women, from whom we purchased plants, but who also contributed their time and expertise. Horticultural instructors from community colleges brought their classes to help with heavy work and to learn from our attractive displays of beautiful and unusual plant material; faculty from the University College of Forest Resources came to help; landscapers and Landscape Architects joined in and we all learned one from another and had fun doing it together. Husbands or wives of the workers also came to lend a hand. Our first plant sale was an enormous success, because this spirit prevailed as it has in every succeeding sale, friends joining friends in a common cause.

In his Fall 1966 report in the Arboretum Foundation Bulletin, Mr. Mulligan wrote that the Foundation governing board had in fact given him a Cushman Truckster at a cost of \$2,200, just a year and one plant sale after his initial request had been made, and the Unit Council had donated expense money for Arboretum staff to attend professional meetings. Things were looking up!

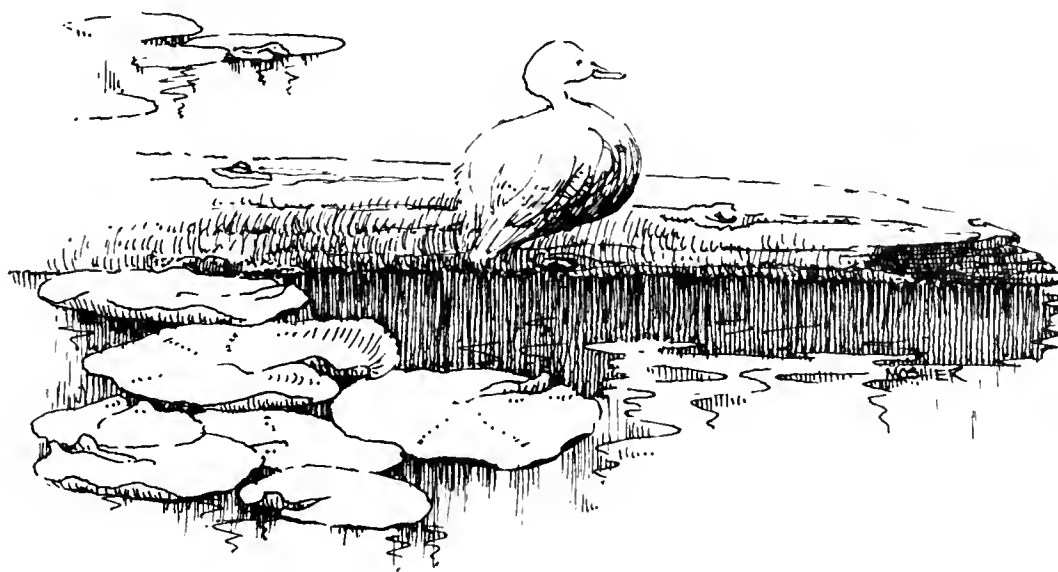
For years we laughingly called ourselves the "Lick and Stick" organization as every member of the board worked on every nitty gritty job, addressing labels, licking stamps, typing plant sale lists, notices, etc. and every activity, potting parties to dig and prepare contributed plants for sales or displays. We all worked on the fabulous public garden tours to some of the finest gardens, generously opened for our purposes; we were the speakers for our early lecture series in the Eames Theater at the Pacific Science Center, to which every board member came, whether actively involved or not. Dr. Dixy Lee Ray, the brilliantly creative Director of the Pacific Science Center, made all necessary facilities available to us at no cost. There were no large grants as are presently coming from the private sector, but when a \$200-\$400 check would come from a Seattle business foundation which believed in our cause, it was exciting! No one underwrote expenses, money was spent on necessities or services that we couldn't do ourselves. It was earned by hard work and saved so that a maximum would be available for Arboretum purposes. We worked closely with Dr. James S. Bethel, Dean of College of Forest Resources, and Dr. Dale W. Cole under whose responsibility the Arboretum fell. From time to time we received from them lists of needed services, equipment, etc., with an estimated cost per item, from which the board could determine which they wished to support. We never rejected requests for expenses to enable Brian Mulligan or Joe Witt to attend national professional meetings in which they held major offices. In spite of the limited funds, it is because of their expertise, hard work and leadership that we had and have an Arboretum of international reputation, a fact we sometimes overlook, because we are too close to the difficulties and problems.

Our early membership grew out of our friends who shared deep concerns for the future of our beloved Arboretum. It grew through our memberships in the American Rock Garden Society, Seattle Garden Club(who had traditionally maintained a strong supporting role in the affairs of the Arboretum), Tacoma Garden Club, Lake Washington Garden Club, the Rhododendron, Bonsai and Fern Societies and Garden Clubs of America. Because these were predominantly national organizations, our membership list, though mainly Northwest in scope, attracted national and international members. (We really went international when we were asked to enter a display at the International Rock Garden Plant Conference in Nottingham, England in 1981... held only once every ten years... and joyfully greeted NOHS members from far away places. As a result of that conference, we have added new members, contributing exciting new seed to our seed exchange and fine articles to the pages of our Journal.)

Throughout the history of the NOHS there remained a close bond between the founding members, enabling them to work hard together and accomplish what at first might seem momentous impossible feats. To illustrate that bond, in 1971 when we were deeply saddened by the death of Virginia Anderson, we learned that it as stipulated in her will that each remaining founder would receive a mature plant or plants from her exquisite treasure garden; additionally, certain rare specimens were earmarked for the Arboretum -- we the trustees entrusted to babysit them until such a time as they were incorporated into the overall plan, as determined by the Director.

As with the first slate of officers, those who served were volunteered, and those accepting jobs did it because there was a need and it was their turn to accept and take responsibility. Certainly after the first year, there were nominating committees, slates of officers and trustees to be elected appropriately as provided by our bylaws, at the festive annual meetings. This was a dedicated, hard-working board, and each succeeding president accepted, not for the glory of prestige that the office of President might suggest (they knew better!) It only meant more time, dedication to every detail of this creative organization, added to the responsibilities they already had. This was also a strong-minded group, with positive ideas and often differing opinions, so when you were asked to serve as President, much soul searching had to be done. It was only because someone had to do it, and it was now your turn, that you accepted the nomination. Each succeeding President went into office with the same dedication and together with her new board, added her unique creativity, imprinting her own style and left the office, the organization enriched by her job well done.

Because of our intense interest in education, and our involvement in educational pursuits in many directions throughout the horticultural community, we were often told that we behaved more like a horticultural society than strictly an Arboretum supporting group. The outlook for the Arboretum was bleak due to problems with the city; the University budget was severely cut by the state legislature, and our Arboretum remained a stepchild somewhere out in left field. Although we continued to financially support essential programs, we were advised to invest our hard-earned income until such a time as a sizeable amount might be needed. What was not turned over to the University, our treasurer wisely invested in short-term, high-interest rate securities. Previous efforts by others to organize a much-needed horticultural society for the Pacific Northwest had never gotten off the ground, so after much deliberation and controversy within our membership, we reincorporated July 30, 1973, under the name of the Northwest Ornamental Horticultural Society.





The political climate of the 60's ran well into the 70's where controversy became a way of life with ongoing public hearings within city hall chambers, debating the Seattle City Park vs. The State of Washington Arboretum concept. The political ear was tuned in with the small groups of dissidents and minorities and the "large powerful University" represented a threat and could do no right no matter what they did. Anyone who could give thoughtful testimony, supported the University and talked in terms of Arboretum, was either an affluent Broadmoor neighbor, totally anti-minority or from out of town and it was none of their business anyway. A few City Council members came to eventually support the Arboretum, but the seemingly unteachable city political establishment felt secure in the knowledge that we vocal out-of-towners could not vote on this issue or for their re-election. It was a depressing no-win situation.

When Dr. Charles E. Odegaard, then President of the University, proposed fencing a part of the Arboretum for the protection of fragile plant collections and safety of people, an explosion followed within the Montlake and Central area communities. The hearings that followed were long, frustrating and nerve wracking. All intelligence flew out the window when a distasteful hippy type appeared, strumming a guitar and singing "Don't Fence Me In", the only thing to capture and eye and the ear of the news media.

The earlier emotional controversy between two Arboretum supporting groups was subsiding as many members in both organizations worked continuously to mend fences. Many worked on both plant sales, some held memberships in both groups, and when Mr. Mulligan asked us to write for the Arboretum Bulletin, we did. Those of us whose gardens had unique collections of plant material, welcomed Arboretum Foundation Units to come for conducted tours. Members on both sides tirelessly attended hearings, prepared and gave testimony, were into another heated battle, but this time united on the same side fighting for the very existence of the Arboretum.

The period of 1974-1976 was that of great change in a comparatively short time within the NOHS and the University. We had come of age enough to take our first faltering steps as a horticultural society, to nominate men to the board and to offer new services to our members. It was for this interesting period that I was volunteered for the job of President. The first responsibility, the first month in office was to prepare testimony and present it before the Board of Regents of the University on behalf of the NOHS, strongly supporting Dr. Odegaard's proposal to fence the upper portion of the Arboretum. Giving testimony elsewhere was one thing, but appearing before the Regents in the board room within the Executive offices of the University of Washington... that prospect felt enormously intimidating!

Dr. Phillip W. Cartwright was acting President in the six-month interim between the retirement of Dr. Odegaard and the arrival of Dr. John R. Hogness. We had met a number of times before. He had the unenviable position of Vice-President in charge of minority affairs and the Arboretum, was dedicated to the Arboretum, working tirelessly on behalf of it, and always attended our annual meetings. Because of his warm appreciative greeting and his friendly accommodating staff who made everything as comfortable as possible, the hearing evolved into a tremendously interesting experience. After listening to incredible anti-arboretum testimony droning on and on and watching the press sympathetically taking copious notes, by the time that I was called upon, I was so angry that no one could have stopped me from having my say. The Regents were intelligent gentlemen, attentive and openly receptive to thoughtfully prepared testimony.

Within the pro-fencing supporters, there were differing opinions, from Dr. Odegaard's of fencing the eastern portion, to my own to encompass the entire Arboretum, close it to everything but pedestrian traffic and charge visitors a nominal entrance fee in order to provide income for at least minimal maintenance. I had visited major botanic gardens in Great Britain that were fenced, my favorite, the Royal Botanic Garden within urban Edinburgh. There the choicest collections of the rarest plant material could be found, some only to be read about in obscure botanical journals or new acquisitions not yet botanically described, all protected within high iron fences. And at Kew Gardens within the city of London, with parking outside the gates, a two pence admittance fee was charged, enabling anyone of any means to visit. I found it extremely difficult to understand what all of the ANTI fuss was all about.

Our first and most important order of business at the first board meeting in January of 1974 was to honor Brian and Margaret Mulligan for their years of dedication to the Arboretum (1946-1972) and their strong contributions to many other horticultural organizations including the NOHS. They were made the only Honorary Lifetime Members that the NOHS will ever have.

During this two-year period, I was blessed with the most creative, hard-working, loyal Vice-President, Sue Olsen, with whom everything could be discussed, her opinions always thoughtful and highly valued. There was never any job too large, small or mundane for her to tackle. Although her name is not on the list of founders, she joined the "Friends" as soon as she heard about us and has remained one of the most dedicated, hard-working members. One of her many responsibilities was being an important member of my Liaison Committee with the University, where we met almost monthly for two years, with Dr. Dale Cole, keeping informed on Arboretum progress. At our first meeting, Dr. Cole told us confidently that "there will be an Arboretum program" and detailed the preliminary work that had been done on Union Bay, the former garbage dump, land owned and controlled by the University. Dr. Richard B. Walker, Department of Botany, had been appointed Chairman of an Ad Hoc Committee to explore the feasibility of the development of the East Campus site in 1971 and in 1972 recommended that it could be used for certain Arboretum-related functions. In early 1974, Dean James Bethel had recommended that Union Bay could and should be developed for Arboretum purposes.

This was the first positive, hopeful news we had had in years, and the challenge of restoring a garbage dump appealed to our imaginations. Dr. Cole agreed to come to the next NOHS board meeting to present the Union Bay deliberations to our members, the majority of whom shared in Sue's and my enthusiasm even though admittedly it did not solve the Washington Park Arboretum problem. When convinced, the devil's advocates, which every board needs for balance, soon became the strongest proponents of the Union Bay concept.

Dale Cole and Joe Witt took us on a tour of the site on a wintery day where we saw the former garbage dump at its worst... hard-packed ground, sagging asphalt student parking lots, landfill above refuse and deep peat deposits, the odor of methane gas vented from the sub-strata unpleasantly strong and the unattractive World War II student housing, on the higher stable ground, was to be condemned. What could have been a totally negative, depressing experience was, in fact, the opposite. As Dale and Joe detailed the results of the early studies, the land use plans, you could feel the shared emotion of excitement, the pioneering spirit within us responding to the challenge of restoring unusable land within what was actually an incredibly beautiful setting.

Standing on the highest point of fill, looking to the west, we could see the tree-softened hills of the campus where in the distance some of the buildings of this busy major University could be seen. To the southwest, beyond the curve of Union Bay, the dark unbroken expanse of the Washington Park Arboretum lay at the foot of the hills of a part of residential Seattle. How the high-density metropolitan cities across the country must envy us our hills and trees and more than 200 acres of uninterrupted tree-filled land, apparently undamaged and undisturbed by modern day "progress". To the south, far enough in the distance, the man-engineered Lake Washington bridge lay connecting Seattle to the growing east side communities; the simplicity of design enhancing rather than detracting from the feeling of solitude. Dominating the picture was our sometimes elusive, snow-clad Mt. Rainier, seeming to rise out of the water at the far end of the lake, the sight of which is breathtaking and captures the emotions time and time again, no matter how sophisticated we think our sensibilities have become.

Standing there on the cement-like impossible soil, each of us could envision something different, for that particular spot. I well remember my mental picture of a rustic wooden bench with an enormous rock outcrop from the incline, covered with our native Kinnikinnick, pink in flower and red in fruit. Any visitor could pause to rest there and be caught up in the magic of the moment, watching the activities of the resident and migrating birds.



Another stopping place was on the curving wooden bridge over what formerly was Ravenna Creek before University Village shopping center was built, now unimaginatively referred to as the "drainage ditch". It was wider and more irregular than anticipated and lined with native vegetation, reeds in some places and several species of willow and other woody material in others. What potential! Although it should never be highly developed from a formal landscape sense, splashes of ferns, maidenhair and other water-loving species, primula, iris and fruit-bearing, low-growing gaultherias and vacciniums would further attract the birds and turn it from "drainage ditch" to an enviable accompaniment to the natural plan of things. There appears to be no movement of water except the bubbles from the escaping methane gas, which apparently does not bother the Mallard ducks, whose antics you can watch in June with their little ones scooting joyfully along the waterway.

We stood there for a long time, Dale and Joe obviously pleased at our enthusiasm and spending as much time as we needed answering our questions like... Could the gas be trapped and become an asset to power a recycling, moving-water system? or any comments or suggestions that erupted whether realistic for this site or not. The few disbelievers that had been among us did not have a chance. They were convinced!

Our membership in the NOHS had reached about 300 in number, not through any concerted membership drive, but strictly by word of mouth, friends telling friends that this was where the action was. As the "Friends" we were an activist group, and we were joined by those who believed in our cause. However, as a beginning horticultural society with the distinction of being the youngest and smallest in the world, we needed to provide services in addition to our lecture series, garden tours and our now two plant sales. The large Fall sale had become traditional, and in 1972 Sue Olsen had initiated a June Fern sale; although we enjoyed helping her with it, it has continued being a one-woman operation in its planning and organization.

The NOHS needed a newsletter of horticultural value, to inform our membership of the Union Bay project and to keep them abreast of Arboretum developments. After our Newsletter Chairman put out the first, predominantly inorganizational, bimonthly issue, she was unable to continue due to ill health. A publication was a dream we all shared, but no one had the experience or knowledge of how to go about it. As with any project we ever tackled, we learned by asking questions and learned by doing. Everyone who had any writing experience (and some who hadn't) were asked to contribute new information on old favorites, with strong emphasis on knowing and growing our wonderful Northwest native plant material and on plants little known or grown in our area. So even in its simple beginning, the ordinary was not good enough for the NOHS. Strong supporters of what we were trying to accomplish were Brian Mulligan and Joe Witt, who patiently answered continuous questions, none of which they considered too foolish or too time consuming to give thoughtful answers and to encourage our efforts. They also contributed fine articles to our publication. It soon became clear that a bi-monthly was too ambitious, so a quarterly evolved, and in 1977 it was upgraded to journal, Horticulture Northwest.

Similarly, our lecture series came of age, and although we continued to be the main speakers, we invited gifted professionals (already in Seattle for national or international botanical or horticultural conferences) to be the key lecturer of a program season. Later we specifically invited them to return as our guest speakers. Very early in our history as the "Friends", we met Dr. Richard A. Howard, Director of Arnold Arboretum, who has remained one of our most enthusiastic supporters, an advisor to our organization, and who encouraged us in every project we became involved in. Some of our members had the pleasure of providing hospitality for our famous visitors, others took them to tour gardens, the Arboretum, the gardens at the Locks, and some on field trips to the mountains, thus enabling us to get to know these men as warm interesting people rather than an awesome name we had only read about. Other advisors were and have remained in that capacity are: Dr. Henry M. Cathey, Director, U. S. National Arboretum; Dr. David G. Leach, then President of the American Horticultural Society, and renowned for his Rhododendrons of the World; Mr. Charles A. Lewis, Horticulturist, Morton Arboretum, pioneer of Horticultural Therapy; Dr. Russell J. Seibert, Director Longwood Gardens; Dr. Henry T. Skinner, Director Ereritus United States National Arboretum; and Dr. Roy L. Taylor, Director of the Botanical Gardens at the University of British Columbia. They were all talented speakers, among the finest in the world, and they all encouraged, advised and contributed their talent to the NOHS. Personal lifetime friendships have been established between us and these gifted men.

Each new Program Chairman, with a challenging new theme for the lecture series, has added new names to the growing list of leaders in botany and horticulture from all over the world, giving us, and the public, the opportunity to hear the finest lecturers and to meet them at informal gatherings, luncheons, etc. This high standard has been maintained throughout our history.

Things were progressing quickly with the Universities' commitment to Union Bay, due to the tireless efforts of Dr. Cartwright, Dean Bethel and Dr. Cole, as well as many, many others. At the October 1974 board meeting, the NOHS voted to contributed \$35,000 to finance the Initial Site Plan for Union Bay, and an additional \$500 toward a slide-tape show to publicize it and educate the public. Each disbeliever had to be convinced. Our money for this purpose had remained in several savings accounts and securities, all having to be cashed and deposited in our checking account. This clearly was an exercise in high finance, an opportunity that my Treasurer and I enjoyed to the fullest. Writing the check for \$35,000, too, was no small pleasure.



At the February 28, 1975 University of Washington Board of Regents meeting, which two of us attended, the check with the accompanying letter from the NOHS Board was presented to the Regents, who accepted with pleasure. When we were asked how the money was raised, we replied, through membership dues, garden tours, lectures and plant sales. One of the regents commented astutely, "That represents a lot of plants." At the same meeting the Regents accepted Dr. Cole's recommendation and voted to retain the Seattle firm of Jones & Jones, Architects and Landscape Architects, to make a study of the area and develop the initial site plan for Union Bay.

We were all given a copy of the Union Bay Arboretum Progress report in August 1975, another further update in October 1975. At our Annual meeting in November 1976, we were all given a numbered copy of the Union Bay Master Plan in which it states on the inside cover, "From the University of Washington with thanks, to the Northwest Ornamental Horticultural Society." Under acknowledgement it is written, "Research, planning and conceptual design documented in this Master Plan were made possible by a donation from the Northwest Ornamental Horticultural Society, without whose support the feasibility of a teaching and research arboretum at Union Bay would remain untested."

As Union Bay developed in plan, we were invited to attend many meetings, during which we were asked for our input, and further Washington Park Arboretum problems were discussed. Dr. Irving R. Shain, then Provost of the University (now Chancellor of the University of Wisconsin, Madison) stated that what the Arboretum needed was a \$3 million endowment fund. Although this sounded like a logical solution, as yet it has not happened. But why not, even now?

The NOHS continued to grow and thrive and in 1979 added a seed exchange to its member service. In 1980 the Board committed \$10,000 a year for five years toward the position of Director of the University of Washington Arboreta (Union Bay, Washington Park Arboretum and the Blodel Reserve). A guiding light, gently supporting both groups convinced the Foundation Board that they needed to take a more serious look at the Center for Urban Horticulture and they came through with \$15,000 a year for five years. Match us, top us, whatever... terrific!!! Let the money flow in.

Each year, our members individually and collectively added new accomplishments and involvements to the ever-growing list. They are as follows:

To help pioneer the establishment of the Berry Botanic Garden in Portland, Oregon, the first in the state of Oregon, to help promote it and remain on the board in an advisory capacity;

To be among the leadership in the establishment of the Heritage Gardens at the Museum of History and Industry;

To pioneer and work diligently on the establishment of the Freeway Park;

To work tirelessly on the preservation and development of the conservatory in Volunteer Park;

To pioneer the landscaping of the Lake Washington Ship Canal, and other beautification projects, large and small, for the city of Seattle;

To pioneer Horticultural Therapy through Edmonds Community College, for the quality of life for the mentally and physically handicapped and hospital patients from frightened children to geriatric patients;

To form leadership roles and work in the establishment of the Rhododendron Species Foundation Gardens, quickly growing into the finest collection to be found anywhere in the world;

To be leaders in horticultural fields nationally and internationally, too numerous to list;

To be writers, lecturers, respected authors, experts within their chosen field, botanists, horticulturists, Directors of Botanic Gardens, nurserymen and women, landscapers, architects and designers, plant explorers, new gardeners, young and old; these are the names to be found within our membership roster. We have a right to be proud of the NOHS. This is indeed a most remarkable group. Each founder has imprinted her unique little mark in the history of horticulture. One thing those founders will never have to worry about... on our tombstones you will never read... "She was an immaculate housekeeper!"

As I was coming to the final stages in the preparation of this history, I couldn't help but be grateful that the controversy was finally behind us; that the political climate had changed to enable the pioneering Center for Urban Horticulture to grow and flourish unencumbered. We all could now concentrate our time and emotion on our own creative thing in the horticultural field; no testimony, no hearings; just enjoy. The phone rang; our busy plant sale chairman related that she and two other NOHS members had dropped everything in order to attend a hearing on the controversial Gasworks Park issue. In 1972, the City had the foresight to consult Dr. Dale Cole, soils expert in the College of Forest Resources (he is now Associate Dean for Research), but failed to heed his thoughtful, detailed report. The public funds have been spent, and now in 1984 his predictions have come true. He knew and we experienced gardeners know, that woody plants just plain don't like that kind of soil; they may struggle to exist for several years before dying, but die they will. But try to tell that to the politicians and some influential and highly successful landscapers. Our plant sale chairman said, referring to the hearing, "I'm getting too old for this sort of thing!" I doubt it. Some things never change.

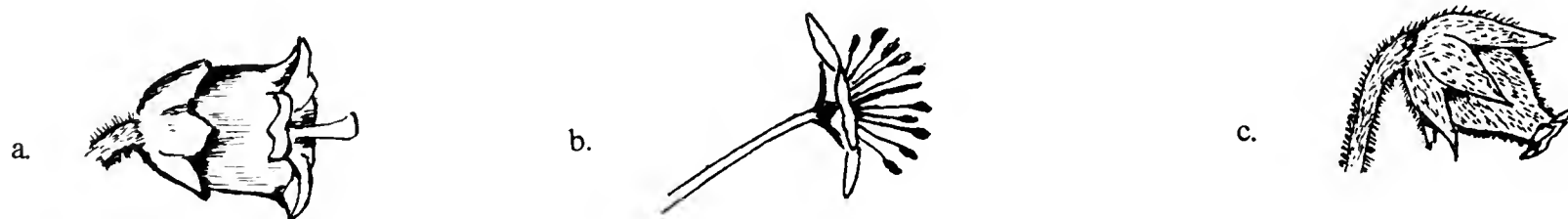


Fig. 4

- a. *Phyllodoce empetriformis*
 b. *P. breweri* c. *P. glanduliflora*
 Sallie D. Allen



UNIVERSITY OF WASHINGTON
SEATTLE, WASHINGTON 98195

Office of the President

October 21, 1975

Mrs. Rodney B. Allen, President
Northwest Ornamental Horticultural Society
18540 26th N.E.
Seattle, Washington 98155

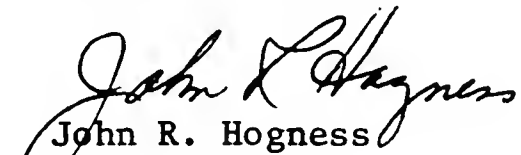
Dear Mrs. Allen:

At the meeting of the Board of Regents of the University of Washington on February 28, 1975, the Board accepted a gift of \$35,000 from the Northwest Ornamental Horticultural Society. The funds were given the University to assist it in making a study of east campus property of the University for development as part of the University's arboreta program.

As a consequence of this generous gift, the University has been able to retain the firm of Jones & Jones Landscape Architects to make the study of the area and prepare a general development plan for a Union Bay Aboretum. The firm has completed its study and it has been a very thorough analysis of the area and its potential for a variety of uses. The University is now reviewing this plan and expects it to serve as a guide to our future development of the east campus portion of the University.

The University wishes to express its appreciation again to the Northwest Ornamental Horticultural Society for assisting the University in the development of our arboretum program.

Sincerely yours,


John R. Hogness
President



Achievements to Date!

Elisabeth C. Miller

A few years after the founding of our organization under the name of the Friends of the University of Washington Arboretum, its name was changed to the Northwest Ornamental Horticultural Society. The reasons being: to fulfill the need for a horticultural society in the Northwest; as an independent organization to be able to "activate" activities which would affirm the potential of a national horticultural center in the Northwest; to provide educational programs and to support other horticultural endeavors.

In 1969, we staged a horticultural exhibit at the Pacific Science Center on the occasion of the Eleventh International Botanical Congress, hosted by the College of Forestry, University of Washington. We featured plant specimens of the Ericaceae family, exhibiting the largest representation from around the globe of this family grown in any single geographical area. The exhibit was chaired by Dorothy Brauss and was awarded an Achievement Medal by the American Horticultural Society. She also compiled the publication, Woody Plants of the Ericaceae Family, which was presented to all delegates.

Dr. Henry T. Skinner, Director of the U.S. National Arboretum and one of the national judges, expressed his opinion that the specimens exhibited were the finest to be grown anywhere. This was confirmed by a number of the delegates from 80 different nations, several of whom commented on seeing a species native to their own countries which they had never seen before.

In 1972, the NOHS undertook the full responsibility of programming the American Horticultural Society's Annual Congress. The result of undertaking another horticultural exhibit (also chaired by Dorothy Brauss) brought us a number of awards and citations from national organizations. The exhibit was held at the Pacific Science Center and covered a vast representation of the plant kingdom (excluding the tropics). For this occasion, Dorothy Brauss and her committee compiled another publication, Ornamental Plants Hardy in the Coastal Northwest.

In 1976, the Horticultural Festival, with a subtitle "Treasure our Earth", was conceived and developed entirely by the NOHS and chaired by Betty Miller. It fell into place as an added feature of the bicentennial year "Juan de Fuca" celebration. Fifteen thousand dollars was solicited from private sources and \$500 was contributed by the Downtown Seattle Businessmen's Association. We were responsible for involving all participants and exhibitors, the extensive organization involved, and both manning and staging the event. Over 100 volunteers participated, including Dean Bethel, College of Forest Resources, as well as other administrative friends of NOHS. Educational exhibits, flower arrangements and a plant sale were programmed by amateurs, public agencies and plant societies. It was effectively presented throughout the Seattle First National Bank and IBM buildings, Plymouth Congregational Church, and the Seattle Public Library. It was given repeated accolades by all news media and other local

periodicals (i.e., "The Power of a Plant--as we watch the astute attorney cross the street carrying a briefcase in one hand and a pot with a trailing vine in the other and wearing a broad smile."). This function won us the coveted Bulkley Medal Award from the Garden Club of America and the American Horticultural Society Achievement Award.

As a result of these activities, a major bonus occurred. The NOHS created occasions for the eminent horticulturists brought to Seattle by the aforementioned events or as speakers for our lecture series to meet with the administrative officers of the University of Washington. They were able to effectively substantiate the need for a horticultural college at the University.

The NOHS Lecture Series is supported by the King County Cooperative Extension Service, Lake Washington Garden Clubs, the Seattle Garden Club, the Tacoma Garden Club, Unit Council of the Washington Parks Arboretum Foundation and Washington State Federation of Garden Clubs. This provides us with the means of broad communication, and we have been successful in programming notable speakers in the field of horticulture of national as well as international repute.

The motivation behind our plant sales is educational, promoting the use of unusual plants in our gardens, and raising funds to support the horticultural projects about which we feel strongly. In this field, we have tremendous talent. In fact, some of our specialists are referred to as being more professionally knowledgeable than the professionals. One instance is Sue Olsen's fern sale offered annually for the past 12 years. Nowhere in the world is there a more comprehensive collection of ferns available for sale or display, including indoor ferns.

The NOHS feels strongly about providing additional services for its membership; thus in 1979, a seed exchange was initiated. Emphasis was not placed on quantity, but quality, little known or grown, new or unusual natives or exotics. It was not the committee's desire to duplicate existing exchange schemes of other societies, but by extending the cutoff date for contributing seed to mid-January, our exchange could accommodate those seeds that ripen in November and December, too late for inclusion in other seed lists.

The field trips, which have been varied in nature, as well as the garden tours, have received enthusiastic response from our membership, an accomplishment to be credited to Nell Scott.

One of our most consequential achievements is our journal--Horticulture Northwest. Editor Sallie Allen is the one-woman producer for all aspects of the publication. It is largely responsible for our national and international membership representation. The publication features new information on both native and exotic plant material, most of which is not published elsewhere.

The NOHS has found it rewarding and of mutual benefit to coordinate our efforts with those of other plant societies. It also gives financial support to the many other organizations literally springing up around us, such as the Rhododendron Species Foundation and Portland's Rae Berry

Botanic Garden, in addition to servicing on their respective boards and advisory committees. The NOHS carries supporting memberships with many local and national horticultural organizations. The more we are able to boost each other, the greater the benefits are for all of us. In 1981, one of our contributions was \$1,000 to the University of St. Andrews in Scotland in support of the first field research expedition in 35 years to western Yunnan, China. In return, we received packets of seed of potential new plant introductions.

We also contributed \$1,000 toward the Alpine Garden Society's plant-hunting expedition to Sikkim, of note in that two trips were made during the monsoon season to mark outstanding plant material on the first trip and the second to collect seed. An account of the expeditions has been published in our journal by Expedition Leader, Barry Starling, of England, and, again, we have received collected seed in appreciation of our contribution. Other contributions have been diverse and include grants to our City Arboriculturist, a University of Washington Anthropologist, Seattle Pro-Parks Committee, Seattle Parks and Recreation Director for a study tour of the parks in China, and a University of Washington delegate to an International Botanical Congress. All of the recipients have responded with interesting articles for our Journal or a lecture for our Lecture Series.

In 1979, we established a Horticultural Education Fund with a \$100,000 goal. This fund was seeded by a \$10,000 grant from the prestigious Stanley Smith Horticultural Trust based in Scotland, an honor in itself. The Trustees of this fund have to evaluate the many internationally representative requests worthy of their support. Currently, the contributions to this fund amount to approximately \$70,000. Once the principal is gained, the annual interest will serve as the means for expanding our horticultural educational programs for the general public.

As a young organization, it is with pride we report the following administration of our funds (approximate):

\$ 46,261	contributed to the College of Forestry for equipment and maintenance of the Washington Park Arboretum
76,352	contributed to NOHS educational programs
53,404	contributed to the University of Washington for Center for Urban Horticulture
12,434	contributed grants and support of other educational endeavors
<u>70,000</u>	solicited for Horticultural Educational Fund
\$258,451	

In responding to a request to provide this resume of NOHS achievements, I must add my own personal comments. The stimuli provided by our notable nationally representative advisors has been effective support and, in particular, Dr. Richard A. Howard, former Director, Arnold

Arboretum, Harvard University (presently Professor of Dendrology), who recognized the NOHS as one of the most forward-thinking, independent horticultural organizations in the U.S. And, certainly not least of all, we have thrived on the cooperation and positive response from the U of W administrative members. As is often true, it is the vigor, ambition and absolute dedication of a small group of individuals who provide the leadership necessary to achieve. And we do have that.

Betty Miller

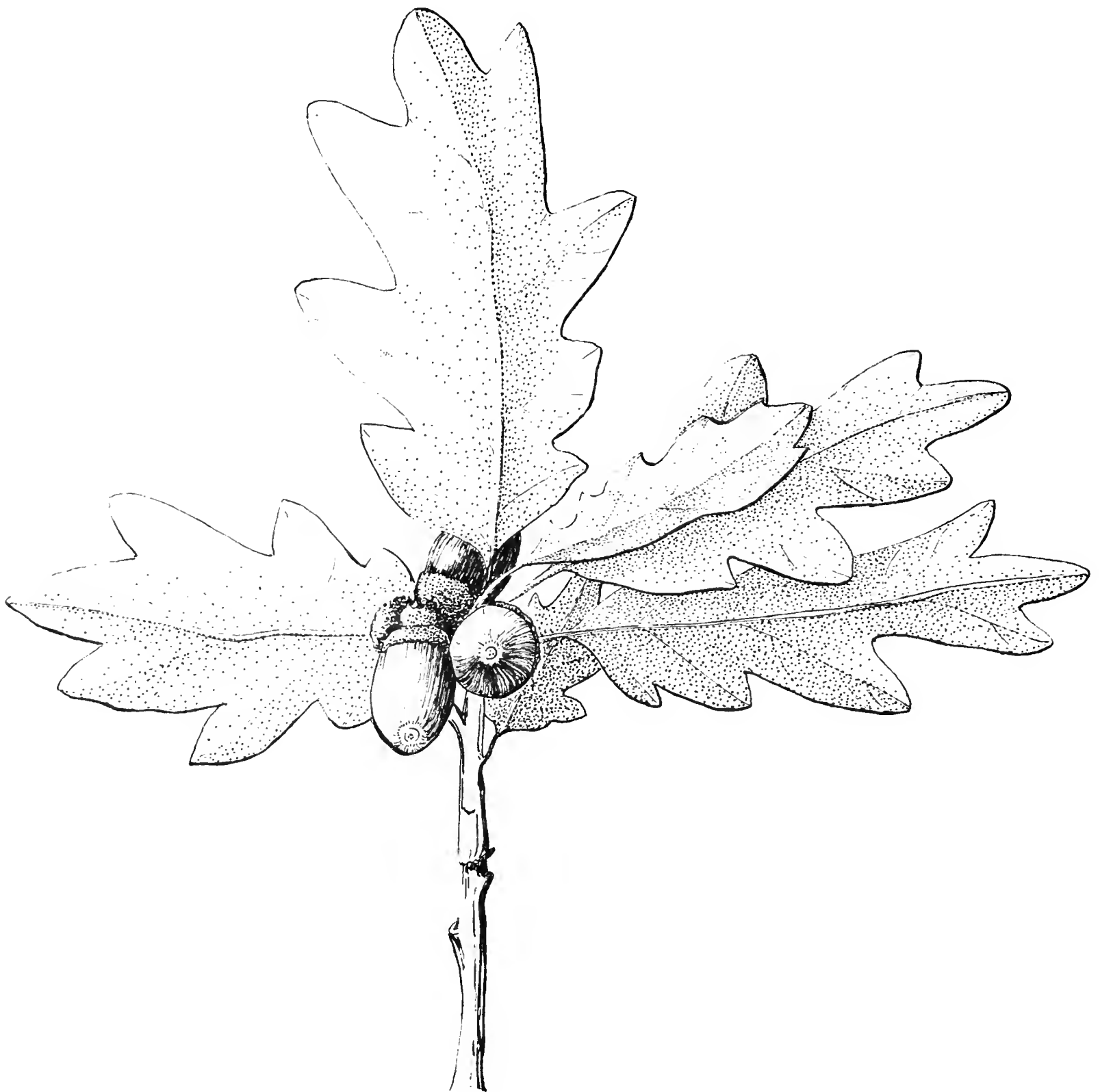


Fig. 5 *Quercus garryana*
Mareen S. Kruckeberg

THE NEW ARBORETUM ON UNION BAY

James S. Bethel, Dean
College of Forest Resources

The building of a new arboretum on Union Bay presents an exciting challenge to the plant and soil scientists and the landscape architects on the University of Washington faculty. It is good to know that our interest in the opportunities inherent in this challenge is shared with the members of the Northwest Ornamental Horticultural Society. We welcome the chance to work with the NOHS in meeting this challenge.

This effort to build a beautiful arboretum from what started out as a rather unsightly landscape is in the tradition of arboreta, botanical garden and park development. Rubble Hill in West Berlin is a beautiful park that was built upon the residues of the torn buildings of Berlin destroyed in World War II. Indeed many people forget that the Washington Park Arboretum emerged from a piece of logged off land and an old city dump as a result of the investment of much time and effort and no small amount of money provided by people dedicated to a worthwhile goal. Indeed, history is replete with good examples of this kind of horticultural transformation from the ugly to the beautiful for the benefit of society. The same kind of opportunity is presented by the project that we are currently sharing.

Progress in the development of this new Arboretum unit is progressing much more rapidly than we could reasonably have anticipated a year ago. The efforts of NOHS have been most significant in bringing us to this providing stage of development.

As you know, the Board of Regents of the University at its February meeting awarded Jones and Jones a formal contract to proceed with the initial design studies and environmental assessment for an Arboretum on the Union Bay segment of the University campus. This action and your role in it was critical. Certainly it was the most important step in our continuing efforts during the past year to dedicate this property as the center of an extensive arboretum program serving not only the University but the city, the state and the region as a whole.

I would like to review for you some of the undertakings that were necessary here at the University which culminated in the action by the Board of Regents.

(1) In June of 1974, I submitted to the Capital Construction Board at the University a report recommending the development of this facility. This report was prepared by the University Advisory Committee on Arboreta, chaired by Professor Cole.

(2) The proposal was reviewed by the University Committee on Landscape and Planning and was strongly endorsed by this committee in November.

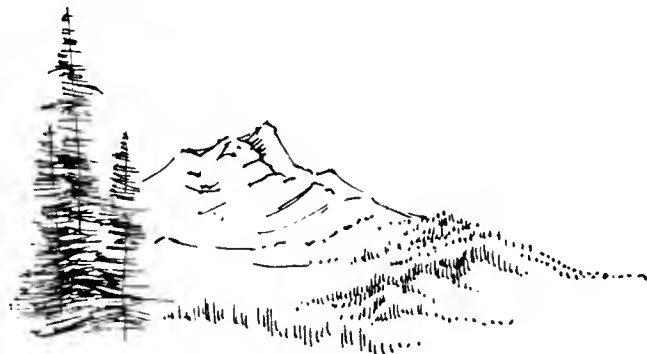
(3) On December 19, the proposal was presented to the University Architectural Commission, a critical step in the internal process of the University. It was enthusiastically received and accepted by the commission.

It is clear that without the major contribution provided by NOHS, we would not have been at this significant stage of development at this early date. The entire planning procedure for establishing an arboretum on this site has undoubtedly been accelerated by many months through the generous action of your organization in providing the financial support for the formal planning exercise.

In our long-term projections for the University Arboretum Program, this facility plays a dominant and indeed central role. It is our plan, as you know, to focus on this site most of the operational functions of the Arboretum, including propagation and outplanting and physical facilities essential to a vigorous arboretum program. This will include meeting rooms, a lecture hall, an excellent library, and offices and research space for the staff and faculty of the arboretum. It is our intention to provide within this central facility the space and services necessary for the activities of supporting lay organizations.

Appreciative as I am of your past efforts and contributions to this common objective, I look forward even more to your continued enthusiastic support and participation in the months ahead as we take the next critical steps in this major arboretum development. I would not like to minimize the work that will be necessary to see the successful culmination of this development. It will require the continued dedication of all of us to see this program through to the point where we can point with pride to a new and different Arboretum in Seattle built upon an unsightly refuse disposal area. This Arboretum, like all arboreta, will be a dynamic biological system and, as such, it will never really be completed. Soon, however, we will be able to give it the title Arboretum even though it may be in the pioneering stages of a continuing development.

Reprinted from NOHS Newsletter, Spring 1975, Volume 2, Number 1.



AN ARBORETUM ON A LANDFILL?

Grant R. Jones

I had known the Montlake dump for over thirty years and intimately for at least twenty years as a student, resident and even as a weekend dumper. During the winter of 1974-75, I was approached by the University of Washington to present Jones & Jones' credentials in consideration as master planners for an "arboretum" on the shores of Union Bay -- on the site of the old Montlake dump.

The opportunity to do a master plan for the arboretum seemed strangely appropriate. Memories of my experience as a Sheldon Fellow from Harvard, when I traveled the newly reclaimed Dutch polders during the winter of 1967, were vividly recalled. At that time I was studying reclamation and plant ecology.

The arboretum landscape engendered a sort of levitating enthusiasm among all those involved -- faculty, administrators and dedicated volunteers of the N.O.H.S. On a blustery morning in January, I was joined at the arboretum site by Brian Gray and Peter Harvard of my office. It felt to me that the artificially created landscape was a view from Urk, looking across the Noordoost Polder to the sea. Under another Dutch cloudscape south in Zeeland, we could have been facing the offshore wind blowing across the Schelde to Zierikzee. However, with the broad flanks of foothills on the horizon and the gleaming white crown of Mr. Rainier which rose through New World clouds, the setting seemed clearly out of context.

At the interview with the consultant selection committee, the central question was, "Is it feasible, in your opinion, to develop an arboretum on this site?" I am as excited now as I was then when I answered, "Of course, but give us the opportunity to answer that question with sound facts and bold proposals."

The Ad Hoc Study Committee for East Campus Development (later referred to as the East Campus Arboretum Subcommittee) was headed by Dr. Richard Walker. During 1971-72, the committee had developed a program for greenhouses and ecological demonstrations. In July of 1974, Dr. Dale Cole's Advisory Committee on University Arboreta, presented a concept for a research arboretum on the site. The committee's conceptual diagram, a sort of map of the site with future zones for various research and propagation activities, was given to us as a guide. In fact, this diagram became the template against which we tested the site's capabilities to support various activities and communities of plant life.

It was February 28, 1975 before we were formally commissioned by the Board of Regents as master planners for this visionary arboretum on a landfill. Even as we negotiated the scope of work with Rolfe Keller, the campus planning officer and the man with whom our day-to-day progress would be shared, we were drawn back to this site again and again as if captured by its spell.

There were days in late winter when the land spread before us like an urban no-man's land; an untitled and artificial barrens with bubbling gas vents to serve as constant reminders of the historic reservoir of refuse which lay buried beneath the surface. And then there were days when the low winter sun warmed the scene and the wind washed waves of air across the tall grasses. Cloud shadows passed over the expanse as if at sea. We even felt like navigators in a way, locating our position, confirming our small progress, and charting a course for the future of the site.

These were the early months of discovery, and we were exhilarated by a sense of the unknown. We felt the ticking of time beneath our feet while we explored various ways to predict how this recent and still shifting landscape would look when it reached its final repose. Soon we would begin to create new directions for this strange legacy of discarded urban material. Layer upon layer of refuse, stood fifty feet deep over another fifty feet of peat (the deepest in the state). The peat itself rested on the ancient bottom of Lake Russell, Lake Washington's predecessor of 15,000 years ago, a hundred feet below the outer edge of the southern shore.

During February and March of 1975, we collected air photos and old photographs. With the help of Walter Dunn, we began to piece together an historic chronology of the site. Once a shallow arm of Lake Washington, whose peat deposits nearly reached the lake surface, it became a vast marsh when the Hirman Chittenden Locks were opened in 1916, lowering the lake level by eleven feet. We learned that rubbish filling began in 1926 at the northeast corner of "five corners" where Union Bay Place and N.E. 45th (Sandpoint Way) converge. Filling operations continued in various forms from dumping and burning to an engineered sanitary landfill (1956) until 1965 when it ceased. Surface grading, shaping and seeding took place in 1971 after rubble and earth fill from the Health Science expansion was spread across the site. When we began analyzing the site ten years ago, it had been artificially created for only four years.

As we analyzed the site I felt like we were a team of palmists, attempting to read the lifeline of a client's hand. The lines bore the marks of a serious accident that had been grafted and reconstructed to the extent that reading the story beneath the skin was difficult. We dug pits and drilled cores, augered deep holes, took soil temperatures and measured other properties of this strange site and its surface waters.

Others involved in this exercise in palmistry: Dr. Dennis Paulson undertook a short but characteristically superb ecological survey; Dr. Ray Guries scanned the site for botanical adaptations; Tom Bekey of Rittenhouse-Zeman advised us on the dynamics of landfills; and Phillip Osborn, our consulting geologist, did some of the most innovative and creative research I have ever seen.

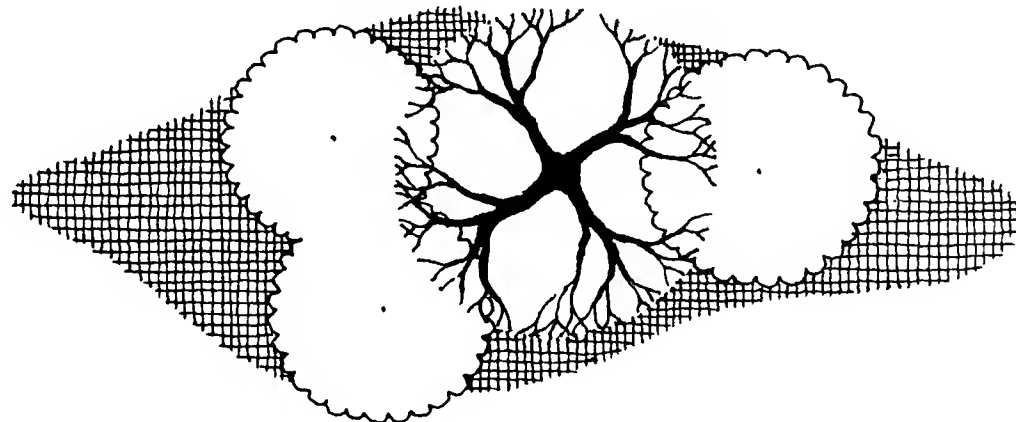
The breakthrough came that Spring when Phil realized that the water table was not only mounded, but that it was migrating en masse toward the southeast through a gap in the unfinished dike which contained the landfill. An empirical formula was developed out of the confusing array of inconsistent information; variables of soil temperature, depth to water table, thickness of refuse, weight of clay overburden and pattern of surface drainage; that enabled him to predict how the site would behave in

the short-term future. Essentially, the site was settling rapidly in some areas and rising in others. Its final repose would find the central quarter of the site settling and the lake slowly advancing into the land creating a beautiful shallow bay penetrating the core of the arboretum. The site would not be lost to the lake, but the advancing water would create a great aesthetic and biological asset with the subsiding land doing all the work.

By the summer of 1975, we had developed an intimate relationship with the land at Union Bay. Our interaction was more than analytical; it was an empathetic relationship based on understanding. We were prepared to maximize the research, teaching, public service, stewardship and open space opportunities inherent in the site.

The rest of the work, the master plan and program, was as fascinating and satisfying as any Jones & Jones has ever undertaken. While the team completed the interim report under the direction of Ken Caldwell, I traveled to three North American arboretums which embodied, in part, the situation at hand. Francis Ching introduced me to the Southcoast Botanic Garden at Palos Verde which was also built on a landfill. Francis de Vos led me through the Chicago Botanic Garden developed on a peat bog. Charles Lewis guided me over reconstructed prairies and discussed the therapeutic wonders of horticulture at the Morton Arboretum.

By the fall of 1975, we had prepared our progress report with various options for development of the site. Many wonderful people had contributed their creative ideas and insights. The memories for example of: the luncheon at the Sunset Club with Dick Howard where I had a wonderful conversation with Mrs. Henry Issacson before my presentation; or the luncheon at the Art Museum which Mrs. Mulligan organized, and the table arrangements with odds and ends from the dump peering out through the flower arrangements(!), and the ongoing conversations with Betty Miller and Sallie Allen which ranged from the practical to the boldly visionary but were never dull; or the strategy sessions with Jim Bethel and Phil Cartwright who steered us on a steady course with the able assistance of Stan Schmid, or the creative workshops with Dick Walker and Bill Hatheway; the challenging work sessions with Dale Cole which could develop spontaneously anywhere -- even on his old schooner down at Shilshole or on the telephone any time; and of course the steady and supportive guidance we enjoyed always from Joe Witt whose constancy and advocacy always came through when the path was hard to follow. These were just some of the relationships we shared over this strange landscape out on Union Bay.



It was nearly two years before the final plan was ready for adoption in 1976. The consensus was solid: a bold proposal would become a reality.

Three years later, I was sitting with Harold Tukey on a small grassy knoll on the site. The arboretum had a new director, and he had made the prospect his own. We were now the architects for the building complex which would actualize not only the master plan, but also an entirely new academic program -- a new invention in North America: The Center for Urban Horticulture. As we gazed over the grassland to the skyline of the city, across the lake to Mt. Rainier looming bolding in the distance, I no longer had thoughts of dutch polders or of sanitary landfills. What had been on drawing boards at Jones & Jones since 1975 was not a dream. What I saw three, could now be.

I feel fortunate that we have been able to build what has been the uncompromised dream of so many dedicated individuals. I am very proud as well of the buildings designed by my partners Johnpaul Jones and John Hunt, for they capture in their own humble and elegant way the essence of Union Bay and the unique horticultural invention of the N.O.H.S.

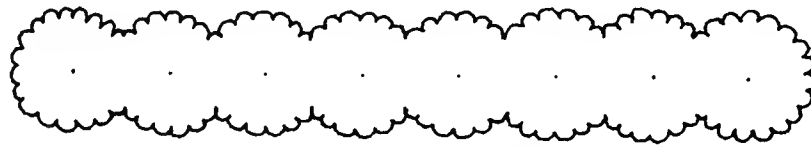


Fig. 6 Viola SEMPERVIRENS
Dennis Thompson

WHY SEATTLE FOR A PIONEERING CENTER?

Dr. Richard A. Howard, Professor of Dendrology, Arnold Arboretum

For two of the past four summers I have read letters of the 18th and 19th centuries in several archives in London, written to and by Sir Joseph Banks, W. J. Hooker, Asa Gray, A. B. Lambert, and others. I was seeking information on Alexander Anderson, the second director (1785-1811) of the botanic garden on St. Vincent in the West Indies. The archives involved were at the Royal Botanical Garden, Kew, the Linnean Society of London, the Royal Society, and at the British Museum. These archives are available to qualified scholars, and as I leafed, I browsed. I encountered letters relating to the Pacific Northwest, the plants of the area, and the several explorers of that area now familiar mostly by the association of their names with plants widely cultivated in Europe. The stories of the men, of their trips, of the introduction and cultivation of plants native to the state of Washington, and of the publications of Nuttall, Pursh, Hooker, and Torrey and Gray can be further enhanced by a rereading of these letters.

Sir Joseph Banks was not only the patron and dominant figure in botany and natural history of the period 1778-1820, but he frequently controlled the direction and nature of exploration and of plant introduction. Banks had participated as a naturalist on the expedition of Captain Cook in 1768-1771 to the Pacific, and he later served as "honorary" director of Kew and developer of other botanical gardens. He knew from reports the general aspect of the coast of the Pacific. So while he was supporting the expeditions of the *Bounty* and the *Providence* that introduced the breadfruit to the West Indies, he did at the same period support the voyage of the *Discovery* of Captain George Vancouver to the Pacific Northwest (1790-1795) on which Archibald Menzies was appointed surgeon and naturalist through Banks' influence. Menzies' collections of dried botanical specimens for Banks, now at the British Museum, Kew, and Edinburgh, were supplemented with seeds and living plants for Kew and the gardens of Banks' friends. These were the earliest single large collection that made known the botanical richness of the Pacific Northwest. They whetted the desire of horticulturists for more.

In 1804, President Thomas Jefferson authorized the expedition of Lewis and Clark to seek a water route up the Missouri river to the Pacific Ocean. Lewis and Clark were to gather "vegetable products" en route, and their names are memorialized in the genera *Lewisia* and *Clarkia*, grown today in many locations far from their native localities. Both genera were described by Frederick Pursh, whose *Flora Americae Septentrionalis* (1814) made known the botanical results of the expedition. Interestingly, the first descriptions of *Lewisia* were faulty due to inadequate material, and an early colored illustration of *Lewisia* which corrected the errors was drawn from an imperfectly dried herbarium specimen that was alive and flowered after it reached England.

Other routes to this treasureful location, the Pacific Northwest, were sought from Hudson's Bay Company locations to the east either over land or by sea routes. The Scot, David Douglas, was known to William J. Hooker, Regius Professor and director of the Glasgow Botanic Garden. When the

Horticultural Society of London (later the Royal Horticultural Society) sought an explorer for western North America, Hooker suggested Douglas, who was accompanied by John Scouler. They traveled by a Hudson's Bay Company brig and spent the better part of two years in botanical exploration. Douglas' journal has been published and his plant collections described by Hooker in his *Flora Boreali-americana* (1829-1840). The title page of this two-volume work noted that it was "compiled principally from the plants collected by Dr. Richardson and Mr. Drummond on the late northern expeditions, under the command of Captain Sir John Franklin, R.N., to which are added (by permission of the Horticultural Society of London) those of Mr. Douglas, from North-West America, and of other naturalists." This illustrated work remains of interest for the many informal comments on the collectors who are cited, with liberal quotations from their journals or field notes. Thus Hooker described in 1829 *Epimedium hexandrum*, noting, "This interesting plant has too long lain undescribed in our herbaria, having been discovered by Mr. Menzies during the Voyage of Discovery of Captain Vancouver. It has again been gathered by Mr. Douglas and Dr. Scouler and as far as I know by no other botanists." This is the species later elevated to generic rank as *Vancouveria* by Morren and Decaisne in a French journal. Living plants and seeds went not only to Hooker but also to A. B. Lambert, as well, and it is in Lambert's publication, "A Description of the genus *Pinus*," that the Douglas fir was first described. Interestingly, this tree today has the correct scientific name of *Pseudotsuga menziesii*, honoring two explorers. Hooker named over a dozen plants in honor of Douglas and of Menzies and fewer for Richardson (*Anemone*), Franklin (*Arenaria*), Drummond (*Silene*), and Scouler (*Corydalis*). The type specimens of these collections are carefully preserved today in herbaria at Kew and the British Museum (Natural History). Sir James Smith also published many new species based on the Menzies collections. Smith is best known as the purchaser of the Linnean herbarium and as the first president of the Linnean Society. He maintained a private herbarium which is now preserved separately at the Linnean Society headquarters at Piccadilly. Smith is known to have obtained specimens from Banks, and it is probable that the Menzies specimens in his herbarium were received in that manner.

Douglas returned to the Pacific Northwest briefly in 1830 before going on to California and to Hawaii, where he died tragically. However, his work enhanced the horticultural interest in the area, and his routes were followed by Meredith Gairdner (*Carum*, *Penstemon*) and William Fraser Tolmie (1832-1837), both physicians to Hudson's Bay Company; by John Jeffrey (1832-1837), who was sent by McNab of Edinburgh and, by David Lyall (1858-1860), sent by Hooker. Tolmie was perhaps the first explorer to climb Mt. Rainier. A peak and an entryway in this famous national park bear his name, as does a *Carex*, a *Calochortus*, and a *Penstemon*. Perhaps the most famous of all Tolmie's collections is *Tolmiea menziesii*, first named by Pursh and based on a Tolmie collection but raised to generic rank by Torrey and Gray with the comment, "We have dedicated this well-marked genus to Mr. Tolmie, the surgeon of the Hudson's Bay Company at Puget Sound, in order that his name, like that of Menzies, Douglas, Drummond and Scouler, may be permanently associated with plants of the region in which they all made so many outstanding discoveries." No other native plant of the Pacific Northwest is so well represented in gardens and homes as this popular "piggyback plant" or "youth-in-age."

Little seems to have been written on the "Oregon Association" with which the name John Jeffrey is linked. Harold Fletcher, in his history of the Royal Botanic Garden, Edinburgh tells of the formation of the Oregon Association on November 22, 1849, at the Royal Botanic Garden as a "meeting of gentlemen interested in the promotion of Arboriculture and Horticulture of Scotland." The objective of the group was to send a collector to the Pacific west coast to collect, chiefly seeds of conifers. John Jeffrey, an employee of the garden and one who had caught the eye of James McNab, who himself had visited the area, was chosen. By the spring of 1851 he was in the Mt. Baker region. He is known to have introduced *Tsuga mertensiana* (now the state tree of Washington), *Tsuga heterophylla*, *Abies amabilis*, *Abies lowiana*, *Abies procera*, *Pinus contorta* var. *latifolia*, *Pinus balfouriana*, and the pine Dr. Greville named for him, *Pinus jeffreyi*. It is believed that many of Jeffrey's original introductions are still living plants in various gardens in Scotland.

Finally, in 1858 and 1860 David Lyall was sent by W. J. Hooker to this area. Hooker's *Flora Boreali-americana* had just been completed, and Hooker felt more was to be obtained in the Pacific Northwest. Furthermore, *A Flora of North America* by Torrey and Gray was also being published, and Lyall's specimens were thus studied and described by both botanists on the two sides of the Atlantic. Species of *Laris*, *Anemone*, *Penstemon* and *Lupinus* have been described using Lyall's name.

Other botanists subsequently have collected and distributed plants from the Pacific Northwest; many are remembered by their names in specific epithets. These early explorers began the relationships of men and institutions that flourish to the present. Kew, Wakehurst, Edinburgh, Dawyck, Logan, and Wisley grow more plants of the Pacific Northwest, due to similarities of climate than did the Botanic Garden of Asa Gray, the Arnold Arboretum of Charles Sargent, or the New York Botanical Garden of Torrey and Britton. Nevertheless, the interests of the staff of each must consider the plants of the Northwest for introductions to cultivation and in monographic or floristic publications.

As the result of a deep interest in the plants of the Pacific Northwest on the part of many people, an Arboretum and Botanical Garden Society was incorporated in 1920 and in 1935 a WPA project began an arboretum in Washington Park as a cooperative effort between the University of Washington and the Park Department of the City of Seattle. The first issue of the Society's Arboretum Bulletin, Volume One, Number One, was issued in December 1936. The potential arboretum was described then as "A place for intellectual recreation, aesthetic appreciation, research and scientific study, which will be a tremendous asset to the entire Pacific Northwest and a big step forward in the development of the University of Washington as one of the great educational centers of the world." Hugo Winkenwerder, Dean of the College of Forestry, is considered to have been the first director. A fully developed scheme for plantings was published as prepared by James Frederick Dawson of the Olmsted Brothers of Brookline, Massachusetts. The relationship with the City of Seattle was patterned after the agreement between the City of Boston and Harvard University for the Arnold Arboretum. Dr. R. D. Merrill and Dr. Donald Wyman of the Arnold Arboretum were early visitors and advisors. Merrill wrote, "Because of your favorable climate you can grow thousands of species that are not hardy

in the east, and thus your arboretum has the added advantages to grow and display a far wider selection of material than any other institution of its kind in this country." The propagation of rhododendrons and the distribution of the "rare tree," *Picea breweriana*, was sponsored for city planting. The public was invited to join as Friends and to make contributions in support of the Arboretum. For a few years apples from Washington state were sold nationwide to add to the income of the Arboretum. The education program began immediately, and an Arboretum radio program of popular information went on the air in 1940.

Gifts of plants for the new arboretum were received from many institutions. I know that some introductions of the Arnold Arboretum from China were immediately shared with the Washington arboretum when it was felt that the plants would not be hardy in Boston but would endure or thrive in the Seattle area. Professor Aven Nelson was one of the first botanists sponsored to collect seeds for the arboretum, as were C. Leo Hitchcock and Sylvia Edmonds in 1939. William Wright Smith of Edinburgh offered plants from Asian contacts, and Colonel Frederick Robert Balfour encouraged Dr. Cecil Tenny to grow Asiatic rhododendrons when those of the Pacific Northwest provided splendid plants for his estate in Dawyck.

Dr. John H. Hanley served as director from 1939 until 1947. Mr. Paul Brown was an energetic superintendent, but both resigned in 1947, and Wisley supplied the indefatigable Brian O. Mulligan. Mulligan began writing for the Bulletin soon after his arrival and, believe it or not, he has missed few issues since. I am one of a large group of his admirers who look forward to his regular contributions. Mulligan and the late Joseph Witt made quite a team for the Arboretum. Mulligan retained his contacts in Europe, while Witt served well the American Association of Botanical Gardens and Arboreta.

Since 1980 the collaboration of the University of Washington, the City of Seattle, and the support of private citizens through the Arboretum Foundation and the Northwest Ornamental Horticultural Society has culminated in The Center for Urban Horticulture. Dr. Harold B. Tukey, Jr. carries a new title, "Director of Arboreta," the significant plural indicating the scope of his responsibilities and activities. I know from personal experience that the director of an arboretum does look back to see what his predecessors have tried successfully and what they have accomplished. I am sure Dr. Tukey has noted a statement made years ago by Brian Mulligan. When someone commented he was difficult to reach by telephone, he made the statement that "being on the job and in the office isn't necessarily one and the same thing." In anticipation of his work "in office," Dr. Tukey has outlined some of his staffing goals for the Center and with pleasure we see these being fulfilled. He has also noted as assets the "great array of enthusiastic horticulturists and progressive plant-growing industries in the midst of a growing community." It is not fair to mention a single name among the Northwest's talent and pool of "enthusiastic horticulturists" but I have been pleased to be associated with one generous, knowledgeable person who maintains an extraordinary private garden and who opens it freely to visiting groups. I have been on committees and shared projects with Betty Miller and have admired her energy and knowledge. Horticulture in Seattle has no stronger supporter, whether it be for Operation Green Triangle, the gardens created by Carl

English, Jr. at the Locks, the Bloedel Reserve, or The Center for Urban Horticulture. I know there are few botanists who attended the 11th International Botanical Congress held at the University in 1969 who will ever forget the horticultural exhibit featuring the Ericaceae which was staged at the Pacific Science Center. The booklet issued for that occasion is one of the most valuable lists in our reference library and a tribute to many like Betty Miller, "enthusiastic horticulturists" all, who worked on the exhibit and supplied the materials. How fitting that her name is on the Elisabeth C. Miller Library building which, with the R. D. Merrill Building and the Otis Douglas Hyde Herbarium, all indicate the support available to the Center for Urban Horticulture.

I began by suggesting that the archives of Europe offer important and interesting data on the development of our knowledge of the plants of the Pacific Northwest. I can close by agreeing with the statement, "The Center for Urban Horticulture of the University of Washington is the first department of its kind in the country." Also unique is the cooperation of government officials of the State of Washington and the City of Seattle, the University of Washington officials and staff, and the wonderful "private citizens". Cooperation like this produces results. The future looks very bright indeed.

Fig. 7 *Osmaronia cerasiforma*
Mareen S. Kruckeberg



Center for Urban Horticulture - A Reality

Dr. George M. Beckmann, Provost, University of Washington

Center for Urban Horticulture -- A Reality

This spring and summer saw the first fruits of a decade-old partnership between the University and the Seattle area community when the Center for Urban Horticulture moved into its new headquarters at Union Bay. From its initial conception, the Center has been a joint enterprise of the University and the horticultural community, and the move into a permanent, newly constructed center is the realization of a shared dream. Bringing together University faculty and researchers on the one hand and, on the other, members of the local community committed to the importance of plants in urban and suburban environments, the Center has become a regional resource unique in its facilities and its programs.

Thanks to the unflagging effort of its director, Dr. Harold B. Tukey, Jr., the generosity of many private individuals, and the commitment of societies such as Northwest Ornamental Horticultural Society, we now have adjacent to our campus the first urban horticulture facility of any university in the country. The physical complex of the Center is composed of a newly completed conference hall and a main building, to which will later be added additional areas for research, teaching, and display. The Center's research facilities include the Washington Park Arboretum, managed in agreement with the City of Seattle; access to the Bloedel Reserve, devoted to the study of human/plant interactions; and the laboratories and outdoor plots located at Union Bay. Once the new controlled-environment facilities -- greenhouses and growth chambers -- are built at the Union Bay site, the Center's planned facility will be completed. It will be equipped by a combination of private and state funding. Yet to come -- research arboretum, demonstration garden, and landscape planting.

Recognizing the importance of this new field, the University administration has gradually increased its support for the Center for Urban Horticulture. From a beginning in 1980 of less than two faculty positions and a state budget of \$65,000 per year, the Center has grown to a faculty of eight, eight graduate student assistants, and a yearly state budget of approximately \$400,000 per year. This growth in support is particularly remarkable in that it took place during a period of retrenchment for the University as a whole, necessitated by drastic cutbacks in its state budget. The fact that we have managed to build a viable new program under such conditions is testimony not only to community support but also to the University's strong commitment to urban horticulture.

Exploratory Discussions -- 1960s and Early '70s

Interest in a strong University horticulture program developed both on and off campus in the 1960s. A number of factors made the University an especially suitable home for such a program. First, the University already had a multi-million dollar investment in its Arboretum, a unique collection of plants that placed the University far ahead of other institutions seeking to develop programs in urban horticulture. Second, the University had developed strong academic programs in botany, forestry, and landscape architecture, all fields related to urban horticulture. Third, the

University is located in an area with a climate that supports a wider variety of plants than any other area in North America. Lastly, the Seattle area is noteworthy for having a large and enthusiastic horticultural community. This community encompasses the Northwest's plant and garden societies; its agricultural and forest industries; its commercial and professional network of landscape architects, municipal arborists, nurseries, and landscape maintenance firms; and the scores of individuals who take pleasure and pride in their own residential gardening. These combined strengths inspired discussions between University officials and local horticulturalists about the development of an urban horticultural program with facilities at Union Bay.



Planning -- 1974 to 1977

In 1974 Dr. Cartwright, the Acting President of the University, directed the Advisory Committee on University Arboreta to study the feasibility of an arboretum at Union Bay. By July, a draft plan for a research and teaching facility including buildings, greenhouses, and planting areas had been developed by a subcommittee. Finally, in August 1974 Dr. James Bethel, Dean of the College of Forest Resources, formally proposed to President John Hogness that an arboretum be built at Union Bay, and in December of that year President Hogness approved the concept and the preliminary plans.

The Northwest Ornamental Horticultural Society, responding to the growing University commitment to the idea of horticultural teaching and research, in February 1975 contributed \$35,000 for a study of the Union Bay site. The University chose the firm of Jones & Jones for the study.

During 1975 and 1976 Jones & Jones, with consultation from the University Advisory Committee on Arboreta and input from the public, developed a Master Plan for the Union Bay Teaching and Research Arboretum. Plans were reviewed by the Faculty Council on University Facilities and Services, the Faculty Council on Community Services, and the University's Architectural Commission. Public reaction and comment was sought through local newspaper and meetings with interested groups and neighboring communities. The Northwest Ornamental Horticultural Society gave additional funds for producing a slide-tape show used in public presentations. In 1977, the Master Plan was approved by the University Board of Regents. It has guided the project's progress since that time. The Master Plan's design concept is based on the four functions of the Center for Urban Horticulture: teaching, research, public service/display, and stewardship. The Plan provides for development of the facility in a series of well-organized phases, and includes a vision of the Union Bay site fifty years hence.

Preliminary Stage: 1978-80

As a first step towards establishing the new Center, the University dedicated 55 acres of landfill, and preliminary site work began in 1978. In its 1979-81 budget request to the State, the University in July 1978 submitted a \$892,000 capital improvement program for the phased development of the Union Bay Arboretum to implement the Master Plan. Included in this program was an initial request of \$150,000 for further design and initial construction. When the State did not approve this request, the University administration in October 1979 allocated \$150,000 from its Minor Repairs budget to proceed with development of the East Campus site.

The University meanwhile also took steps to establish the academic program in Urban Horticulture. In 1977 President Hogness appointed a University Advisory Committee on Arboreta, chaired by Professor Dale W. Cole of the College of Forest Resources, to make recommendations to him. The committee's report was submitted to President Hogness in April 1978.

First, the report recommended that the Arboretum Program be headed by a Director with a national reputation as a researcher, a record as an effective administrator, and strong public relations skills. Second, it recommended an administrative structure whereby the Arboretum program would no longer be a unit within the College of Forest Resources, but an independent unit reporting directly to the Provost. This arrangement would offer the administrative flexibility necessary in building a new interdisciplinary program. The proposed structure also allowed for crucial liaison and interaction with public organizations at the top level of administration. Third, the report outlined the content of the new horticulture program: a program of instruction and research with close ties to other units on campus (principally Architecture and Urban Planning, Forest Resources, and Arts and Sciences) and a vigorous continuing education and public service/display program.

In response to the report of this faculty committee, newly-appointed Provost George M. Beckmann began discussions with prominent members of the horticultural community, including Prentice Bloedel and Elisabeth C. Miller, about a University partnership with the community in developing the program outlined in the report. In 1979 three organizations -- the NOHS, the Arbor Fund, and the Arboretum Foundation -- made a five-year pledge to help fund the program. On its part, the University recruited Dr. Harold B. Tukey, Jr., a nationally recognized horticulturist and outstanding administrator from Cornell University. Dr. Tukey brought to the fledgling program not only his expertise and vision but also his connections with the International Society for Horticultural Science, of which he is President.

In the interim between his appointment by the Regents in November 1979 and his arrival at the University in June 1980, Dr. Tukey, along with Dr. Cole, prepared a detailed program statement for the horticulture program, to be called the Center for Urban Horticulture. This statement envisioned an eventual faculty of ten and a staff of twenty-seven. Along with hiring Dr. Tukey, the University initiated a search for two new faculty and one senior staff position. The University at this stage also committed operations funds of \$65,000 per year and three to four graduate research assistantships.

Public support for this initial stage of the Urban Horticulture program enhanced the University's contribution. The Merrill, Virginia Bloedel, and Thorgrimson Funds were made available for an administration building (some of these funds were later used for other construction), the Larsen Fund for arboretum purposes was established, the Bloedel Reserve was increased in size, and miscellaneous income of about \$40,000 per year was contributed by various support groups to be used for maintenance equipment, supplies, and minor improvements.

The Center's First Year: 1980-81

The Urban Horticulture program was officially launched in June 1980 with Dr. Tukey's arrival as Director. During that same month, the Board of Regents appointed Jones & Jones as architects for facilities planning at Union Bay. By December, schematic plans were completed; in February 1981, the Regents approved preliminary plans. The requisite Environmental Impact Statement was developed and passed through public hearing and review.

As state support was not forthcoming, beginning in 1981, the University was forced to rely almost exclusively on private donors over the next several years for construction funds for the new facility. Other prominent citizens, community leaders, foundations and corporations joined the local horticultural groups and other donors who had lent their financial support to the idea of an Urban Horticultural Center. During this year and the next, major contributions were accepted by the Board of Regents from the Northwest Ornamental Horticultural Society, the Merrill Foundation, the Wagner Foundation, Mr. and Mrs. Prentice Bloedel, Mr. and Mrs. Pendleton Miller, Mrs. John P. McVay, Mrs. Charles Cole, Mr. and Mrs. Charles Hyde, Mrs. Elizabeth Holko, the Seattle Foundation, the Burlington Northern Foundation, the Arboretum Foundation, the Seattle and Tacoma Garden Clubs, and the Stanley Smith Horticultural Trust, along with smaller gifts from many others. Without these private donations, the University's goal to create an Urban Horticulture Center would not have been achieved.

Meanwhile the Center, temporarily housed in the College of Forest Resources, was assembling faculty, staff and graduate students. Two new faculty were hired in 1981: Dr. John A. Wott from Purdue University, who assumed responsibility for the Center's continuing education/public services activities, and Dr. James Clark from Michigan State University, a specialist in environmental horticulture. The Center had acquired one graduate student who was studying the anthracnose disease of native dogwoods and a second studying a curriculum for public outreach programs. Existing Plant Laboratory facilities were renovated to provide temporary laboratory space for the new faculty and students, and the Plant Laboratory Annex was repainted and equipped to provide office space for the new personnel. The Center had received research grants to study foliar nutrition and milfoil composting, and was awaiting word on a proposal for a study of cold tolerance in rhododendrons. In addition, Urban Horticulture faculty and staff were offering public tours and continuing education classes. Extension courses offered in 1980-81 served 106 students.



In 1980-81 Dr. Tukey and his faculty established important contacts with local support groups and with Pacific Northwest agencies such as Washington State University, the City of Seattle Parks Department, the Cooperative Extension Service, and the U. S. Department of Agriculture. Many visitors from other parts of the country and abroad, including directors of arboreta and heads of foundations, university horticultural departments, and government agencies, were received at the Arboretum and Bloedel Reserve. These contacts were crucial in building national awareness of this new program being built by the University and the Seattle community.

Development of the Center -- 1981-84

During 1981-83 much progress was made on site development for the new Center, with field surveys and soil evaluations completed, and research plantings established. Final schematic plans for the main building, including offices, laboratories, and support facilities, were developed with input from the neighborhood community and were approved by the Regents in January 1983. These designs won the 1982 American Society of Landscape Architects award for Jones & Jones, the supervising architecture firm. By April 1983 gifts totalling \$1,100,000 had been received for construction of the main building. A call for bids went out in April 1983, and in July the contract was awarded to Walsh Construction.

The original program had been redefined into sequential phases when the 1981-83 capital budget request as approved by the legislature did not include funding for the Center, making the project totally dependent on donated funds. In 1982, proposals for financing the second phase of Center construction -- a multipurpose conference hall -- were submitted to prospective individual donors, foundations, and support organizations. The Regents authorized Jones & Jones to proceed with working drawings for Phase II in August 1983.

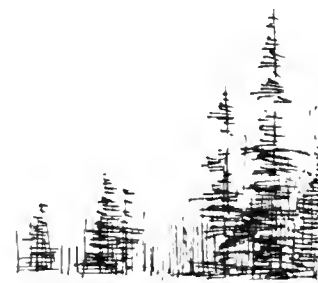
By 1983, the search for a horticultural physiologist to join the faculty was underway. The Center was interacting closely with other University programs through joint research, joint use of facilities, and instruction. Its main ties were -- and continued to be -- with Forest Resources, Landscape Architecture, Botany, and Environmental Studies. Urban Horticulture faculty had presented resident courses in woody plant materials and a seminar in urban horticulture attended by students from other schools and colleges, were giving guest lectures in Landscape Architecture and Forest Resources classes, and were serving on graduate committees for twelve graduate students. Enrollment in 1981-82 continuing education courses, taught by Center faculty on Arboretum grounds, had increased to 235 in 1981-82 and 877 in 1982-83. Center faculty were in great demand as speakers, and this service helped build and sustain public interest in the program.

To support this activity, the University's budgetary commitment to Urban Horticulture had increased. From a total operating budget of \$185,000 in 1978-79, the Center's yearly budget had grown in 1983-84 to approximately \$400,000 a year in 1983-85. This was supplemented by \$35,000 per year in contributions toward operating expenses from private sources.

The year 1983-84 also brought some particularly noteworthy gifts to the University in support of Urban Horticulture: a gift of \$488,000 from Pendleton Miller for construction of an Elisabeth C. Miller Horticulture Library to serve as a resource for the general public as well as faculty and students; a \$50,000 gift from the Wagner Fund and \$125,000 from the Merrill Fund for construction of Phase II; the gift of funds to construct an Otis Douglas Hyde Herbarium; and a gift of \$300,000 from the Henry C. Isaacson family for a horticultural support building. In honor of the Merrill family's having contributed a major portion of the main building's \$1,200,000 cost, the Board of Regents, on the recommendation of President Gerberding and Dr. Tukey, named the Center's headquarters the R. D. Merrill Building.

Spring of 1984 brought a strong note of sadness among the new Center's good fortunes when Professor Joseph Witt was unexpectedly taken ill and passed away. Finding a replacement to fill his position is one of the tasks that lies ahead for the Center, along with recruiting two new faculty members in urban ecology and pest management. However, Dr. Barbara Smit-Spinks joined the Center for Urban Horticulture as Assistant Professor of Horticultural Physiology.

The task of building the Urban Horticulture Program is not yet over. But we now have a strong base from which to build. Dr. Tukey continues to recruit outstanding faculty, and they in turn are attracting superior students. Strong research programs are underway, and community education programs are already expanding. These activities now have a developing modern facility as their home. The University's objective is to make this program a model of excellence -- the finest of its kind in the world. We must not forget, however, that without the strong support of the community -- individuals and families with keen interest in horticulture, and organizations, especially NOHS -- the University's plans would not have moved forward as they have. Now we are close to achieving a goal shared with the community.



Dr. Harold B. Tukey, Jr. and Staff

Dr. John A. Wott

Center for Urban Horticulture

The Center for Urban Horticulture is an academic program at the University of Washington established for conducting studies in research, teaching, and continuing education and public service in Urban Horticulture. It emphasizes the functional use of plants in the maintenance and enhancement of urban environments. It sprang to life in 1980 with the hiring of Dr. Harold Bradford Tukey, Jr.

The Director - Dr. Harold B. Tukey, Jr.

An interest in studying horticultural plants coupled with the enjoyment of working with the people in the horticultural arena has evolved naturally for Dr. Tukey, officially known as the Director of the Center for Urban Horticulture and Director of Arboreta. Called charismatic, serious, inspiring, and real gentleman, Dr. Tukey is most aptly described as the ever-smiling, energetic person who accepted the challenge of guiding the actual development of the Center.

His early introduction to horticulture included traveling to grower and science meetings with his late father, Harold B. Tukey, Sr. The prominence of Dr. Tukey, Sr. certainly helped chart a future for his sons, as he was recognized as the major American authority on dwarfed fruit trees, as well as holding such prestigious positions as the Head of the Department of Horticulture, Michigan State University, and Chief in Research at the New York State Agricultural Experiment Station, Geneva, New York.

The love of horticulture also inspired the two older Tukey sons to enter horticultural professions. Dr. L. D. Tukey is now Professor of Horticulture at Pennsylvania State University, and Dr. R. B. Tukey is Professor of Horticulture at Washington State University.

Born in Geneva, New York, Dr. Tukey, Jr. grew up in East Lansing, Michigan. He spent summers with Dr. C. L. Hamner, one of those responsible for the development of 2, 4-D as an herbicide, and with Professor Stanley Johnson, world-renowned fruit breeder. He attended Michigan State University, receiving his Ph.D. in 1958 under the guidance of Professor S. H. Wittwer. After a year as a National Science Foundation Post-doctoral Fellow at Caltech, Dr. Tukey, Jr. joined the faculty of Cornell University as Assistant Professor in 1959, reaching full Professor in 1970.

At Cornell, his research interests centered on the physiology of horticultural plants and plant propagation, and he and his students published extensively on plant nutrition, nutrient mist during propagation, and the promotive effects of rain and mist on plant growth. His influence on graduate students is now felt worldwide, and he annually is asked to serve on international panels.

Dr. Tukey's activities in society affairs are too numerous to fully enumerate here. Briefly, he has been a member of the Board of Directors and Executive Committee of the American Society for Horticultural Science. In the International Plant Propagators Society, he has served as International President and President of the Eastern (U.S.A.) Region. He has been Vice-President and a member of the Executive Committee of the American Horticultural Society.

In 1986, Dr. Tukey will preside over the XXII International Horticultural Congress in Davis, California, as part of his mission as President of the International Society for Horticultural Science. Ironically, his father, who was president in 1966, presided over the last Congress held in the United States.

Dr. Tukey's mission as Director changes by the minute. He is charged with the development and management of the 55-acre Union Bay headquarters site as well as the world-renowned Washington Park Arboretum. He also is involved with the development of the Bloedel Reserve on Bainbridge Island. It is not surprising that a horticulturalist of such international stature was chosen to lead the establishment of the first academic center of its type in the United States, and possibly in the world.

Assisting Dr. Tukey in the daily operation is Ms. Sally E. Dickman, Administrative Assistant. Ms. Dickman previously worked in the Washington Park Arboretum office with the late Professor Joseph A. Witt. Ms. Dickman is responsible for most of the administration, financial and personnel functions of the Center.

Faculty

The faculty of the Center is presently composed of persons who were previously associated with the College of Forest Resources as well as those chosen from searches throughout the United States. Position descriptions for each of these faculty positions, and their respective programs were contained in the master plan adopted for the establishment of the Center.

Professor Joseph A. Witt

No description of the faculty and the programs in the Center during its formative years could omit the tremendous conviction to its creation by the late Professor Joseph A. Witt. Holding degrees from Washington State University, the late Professor Witt was considered one of the Northwest's leading authorities on plant life and almost synonymously was associated with the Washington Park Arboretum.

The developing faculty and staff of the Center will always remember his willingness and resourcefulness in introducing us to the complexities of the Northwest. It was he who provided a transition from the old--the establishment to the new--the uncharted.

The late Professor Witt spent many hours in untiring efforts to support the establishment and development of the Center. Even though his life centered in and around the Arboretum, he saw the Center as the way for

further development and security of his and predecessor's work at the Arboretum. His legacy of dedicated commitment will never be forgotten.

Dr. William H. Hatheway

Holding a one-third time appointment in the Center is William H. Hatheway, Professor of Forest Resources, a world-renowned specialist in physiological ecology and tropical forest botany. Dr. Hatheway has been associated with the University of Washington since 1969. His special interests include rhododendrons, and he has been active with the local rhododendron societies as well as the Rhododendron Species Foundation.

Dr. Hatheway's research interests include studies involving the cold hardiness of landscape plants. His expertise has lead to appointments with the Rockefeller Foundation and other tropical study centers in Brazil, Costa Rica, Mexico, and Columbia. He brings to the Center a special background in forestry, ecology, and mathematics which will be useful in plant research studies.

Dr. John A. Wott

The first faculty member to join the Center from outside the University of Washington was Dr. John A. Wott in April 1981 as Professor of Urban Horticulture. A graduate of the Ohio State University and Cornell University, Dr. Wott completed thirteen years as a member of the Purdue University Cooperative Extension Faculty in Indiana as the State specialist in Home Horticulture.

At Purdue, Dr. Wott developed a Home Horticulture program for the State of Indiana which was the model program for all other states. While there, his name appeared daily in horticultural news stories throughout the Midwest, as he was responsible for thousands of releases through newspapers, radio and television. Dr. Wott personally authored over 150 extension publications and has published articles in every major horticulture publication, both amateur and scientific. Responsible for hundreds of garden-related programs in the Midwest, he also developed major educational aids consisting of slide sets and educational displays, several of which won Gold Medals at the Indianapolis and Chicago Flower Shows.

Dr. Wott was the team leader who developed the first computerized Vegetable Garden Plan, now recognized as one of horticulture's most innovative horticultural discoveries. He also serves on the Board of Directors, the American Horticultural Society, has chaired and is a member of several committees and working groups within the American Society for Horticultural Science and is presently International President, The International Plant Propagators Society.

Dr. Wott is responsible for the continuing education and public service programs in the new Center. This includes the supervision of the educational and outreach programs at the Washington Park Arboretum and the developing ProHort program for landscape maintenance professionals which is conducted by Mr. Van Bobbitt, Continuing Education Coordinator. In addition, Mrs. Jan Pirzio-Biroli, who started her career at the Center as

Volunteer Coordinator in the Arboretum, is presently handling many of the plant curatorial duties of the entire Center.

The quarterly Urban Horticulture-Arboretum courses offered to amateurs and professionals now number fifteen compared to six three years ago. Public lectures, guided tours and the monthly professional seminars (attracting over 100 participants) are being increased quarterly. Community programs with the Washington State Federation of Garden Clubs, Seattle City Parks and Engineering Departments, and vocational horticulture programs have also been conducted.

Dr. James R. Clark

Also joining the Center early in its development (July 1981) was Dr. James R. Clark, a native of New Jersey. One of the horticulture's best young academicians, Dr. Clark studied at Rutgers University and the University of California, Davis. He held the position of Assistant Professor of Horticulture at Michigan State University for three years, where he was heavily involved in teaching plant propagation and landscape management courses.

At Michigan, Dr. Clark was one of the outstanding young professors who advised horticultural students. He was responsible for the internship of students in gaining accredited work experience at nurseries and garden centers throughout the United States.

Dr. Clark, just recently promoted to Associate Professor of Environmental Horticulture, is responsible for the development of teaching and research programs dealing with "whole plant" problems. His present research program involved studies of heavy metals in urban soils, tree-forms including root-top interactions, effects of shading on woody plants, and storage and survivability of selected trees. He is heavily involved with the supervision of graduate programs, having the responsibility of two urban horticultural students as well as serving on other graduate committees within the College of Forest Resources.

Among other duties, Dr. Clark has taught physiology in the College of Forest Resources and has developed and taught an undergraduate landscape maintenance course. He has faculty responsibility for the nursery-greenhouse facilities in the new Center where he is assisted by Mr. Fred Hoyt.

Dr. Clark has been very active with the Pacific Northwest Chapter of the International Society of Arboriculture and is general chairman and secretary of its 1984 conference to be held in Seattle. He has also appeared regularly at meetings of the International Plant Propagators Society and the American Society for Horticultural Science, where he was past chairman of the Plant Propagators Working Group.

Dr. Barbara Smit-Spinks

The newest member of the Center is Dr. Barbara Smit-Spinks, who joined the faculty in February 1984 as Assistant Professor of Horticultural Physiology. A graduate of South Dakota State University and the University

of Minnesota, Dr. Smit-Spinks has research experience in stress physiology of woody plants, particularly cold acclimation, water relations and plant hormone analysis.

Dr. Smit-Spinks is one of the most promising young professionals in horticulture today. Her diversified experience in teaching, cooperative extension activities, and her detailed research experience will benefit her in establishing an excellent research program. Her ability to communicate to students, professionals, and peers is superb.

She has been active in the American Society for Horticultural Science and the American Society of Plant Physiologists. She has already assumed some teaching responsibilities within the University of Washington graduate and continuing education programs.

In the new Center, this recent graduate has assumed responsibilities for the research laboratory in Merrill Hall. She has been active in determining and securing laboratory equipment, as well as setting procedures in basic laboratory management. Her beginning research studies are centering around water stress relations in landscape plants.

The Future

Presently, the Center is actively recruiting a faculty member for responsibility in plant materials and horticultural taxonomy. This person will assume some responsibilities in the Washington Park Arboretum, assisted by Richard Hart, Grounds Supervisor, and his excellent staff there.

In the next year, the Center will be filling two new faculty positions, in pest management and in landscape ecology. In the recruitment process, Dr. Tukey and his Search Committees will seek the best talent possible for the development of the Center.

The complete roster of permanent employees presently involved in the Center for Urban Horticulture follows.

Faculty

James R. Clark
William H. Hatheway
Barbara Smit-Spinks
Harold B. Tukey, Jr.
John A. Wott

Staff

Van Bobbitt
Joyce Brewster
Sandra Briggs
Jan Davis
Sally Dickman
Richard Hart
Robert Hilzinger
Elizabeth Lawrence
Fred Mauch
Jan Pirzio-Biroli
Dean Powell
Lyn Sauter
David Zuckerman

Graduate Students

Clayton Antieau
Paul Beeman
Andrew Gorski
Daniel Hinkley
Carrie Janssen
Steve Magley
Chris Pfeiffer
Susan Sjaastad-Hill
Dia Salogga

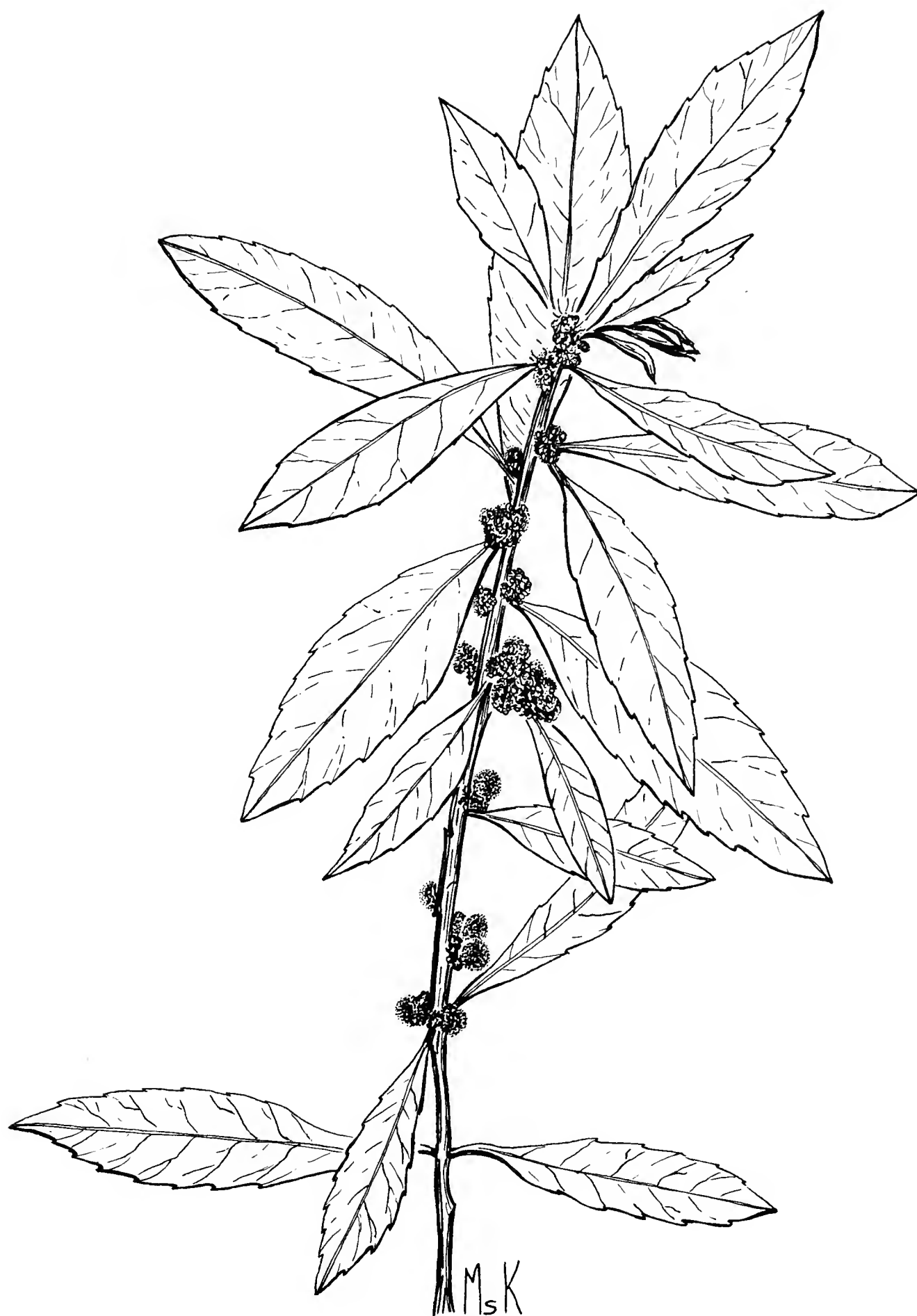


Fig. 8 *Myrica californica*
Mareen S. Kruckeberg

URBAN HORTICULTURE: THE GAME PLAN IS WORKING¹

Dr. Harold B. Tukey, Jr., Director, Center for Urban Horticulture

This special issue documents the role that the Northwest Ornamental Horticultural Society has played in the development of the Center for Urban Horticulture -- with funds, ideas, and hours of volunteer work. The history is worth telling for it shows what people can do if they have a goal and are willing to work together. I congratulate members of NOHS and I am delighted to have a part in Urban Horticulture and a place in this celebration.

Urban Horticulture is a new area of scientific horticulture concerned with functional uses of plants to maintain and improve urban environments. "Functional uses" means that plants are used not only for beauty and ornamentation, but also as screens against wind, headlights, and unpleasant views, to influence climate, perhaps to reduce noise and combat forms of air pollution, for essential food and variation in human diet, and to improve the human psyche in densely populated areas. Urban horticulture serves people who utilize plants, primarily in landscape situations, including landscape maintenance and parks personnel, landscape architects, arborists, highway planters, nursery contractors, members of plant societies, and amateur horticulturists.

Because most modern university departments of horticulture are concerned primarily with production of a relatively few economic crops, less is known about the vast array of landscape and amenity plants and there has been little, if any, research on growing of these plants in landscape situations. Botanical gardens and arboreta have been interested in aspects of urban horticulture for many years. In the past, extension specialists and advisory personnel have developed plant information programs for gardeners, often from production horticulture. Although some information from plant production is directly applicable to landscape maintenance, other information is not and some recommendations are inappropriate or not allowed. This defines the mission of the newly emerging area of urban horticulture -- scientific research and graduate and undergraduate education on the functional uses of plants of all types to maintain and enhance urban and suburban environments providing public service information to people who utilize plants rather than produce them.

Urban horticulture must be a strong academic program in research and education, for the questions about plant utilization demand the same rigor and excellence as found in other areas of horticulture. This is not exclusively urban gardening. In production agriculture, plants of a single cultivar are grown in large numbers in as uniform conditions as possible to provide plants of similar size, flowering, and harvest time so that efficient production systems can be maintained. But in urban settings, plants are grown alone or in small groups in constantly changing

¹ Adapted from Tukey, HortScience 18:11-13. 1983.

environments that are never exactly the same on any two occasions. Small garden plants containing 100 or more species are not uncommon in urban landscapes.

A strong research program begins with basic horticultural physiology applied to urban plants. Some examples of research needs are: root initiation and development in the confined and often modified root zone of plants growing in cities; uptake of water and nutrients and minimum requirements for maintenance growth; stress physiology and mechanisms of tolerance; and systems for growth control and modification. In Seattle, we take great pride in the rhododendrons and azaleas that bloom in profusion from February through May. And yet the dates of flower initiation of rhododendron cultivars have not been established, the effects of environment on flowering are not well known, and the physiology of the plants as affected by pruning is a subject of intensive debate among amateur gardeners with little scientific proof. There are research results from other horticultural plants, especially fruit which could be applied to urban woody plants. For example, rhododendrons tend toward biennial flowering, a problem that growers of fruit crops have long been able to control. As a maintenance procedure, the spent blooms are often picked off by hand, an expensive and labor-intensive practice which is thought to increase bloom the following season. It would seem that a hormone physiologist taking cues from fruit crop production could save considerable costs by modification of flowering including flower set, thinning, and removal with appropriate use of growth regulator treatments. In addition, there are many other maintenance procedures used in urban areas which have not been investigated scientifically such as pruning, irrigation, nutrition, and weed control. Even such basic physiological functions as photosynthesis, respiration, and dormancy have not been researched adequately with urban plants.

Environmental horticulture is plant husbandry -- how plants grow in urban settings and how this growth is affected by environmental factors such as temperature, light, and water or by manipulations such as pruning and planting in containers. Much of what we know about landscape plants has come from observations and experiences of nurserymen, arborists, and gardeners. The city arborist knows much about physiology of roots in the city by observing cracked sidewalks and broken curbs near some trees. Parks personnel know by experience the importance of proper root media, watering procedures, and size and position of planting containers in survival of urban plants. But, there is little good scientific information to back up and extend the knowledge of practical observers and the important research problems awaiting rigorous investigation are almost limitless.

The great commonality for horticulture in urban areas is a love of plants, for beauty, function, and enjoyment. Thus, the heart of urban horticulture is the study of plant materials, including horticultural taxonomy, collection and dissemination of new introductions, and systematic evaluation of plants for their landscape characteristics and usefulness. Every botanical garden and arboretum has experts who can classify and identify plants. We have the Hyde Herbarium, Arboretum and Bloedel Reserve. But now, more than ever, there is a need for classical taxonomy of horticultural plants, emphasizing cultivars and varieties more than

species in an attempt to bring some measure of order to the countless new and rediscovered plants offered by the commercial trade to the gardening public. Amateur horticulturists take great delight in recognizing, collecting, and growing plants, often specializing in specific groups and forms for which the expert help of trained taxonomists is essential. As gardeners grow in horticultural knowledge and become exposed to new plants through travel and study, introductions from other parts of the world must be evaluated by the plant materials expert for their adaptability to local regions. Landscape architects need assistance in suggesting landscape plants to fit requirements such as color, texture, form, size, low maintenance, pest resistance, and tolerance of environmental conditions, especially drought, high or low temperature, and air pollution. In addition, there is need for breeding of landscape plants better able to withstand the flourish in specific locations.

The majority of questions asked in an arboretum of a large city deals with pests -- insects, diseases, and weeds. Thus, urban horticulture needs trained scientists who are interested in pest problems in urban situations. Much of our information of pest control has come from commercial agriculture, but many of these solutions for agriculture are not appropriate in urban areas. Whereas agriculture often deals with a single crop in a large area, landscapes contain many different species in a small area, each requiring special protection. In addition, chemicals which form the basis for pest control in agriculture are not always appropriate to the city and stringent regulations and high cost limit their use. In contrast, some procedures advocated by environmentalists, although emotionally satisfying, are not always successful in a practical way. Of particular importance in urban horticulture is integrated pest management -- the integration of biological control, tolerant cultivars, chemicals, mulches, and naturally occurring allelochemicals into an overall system for managing pests.

A new area of science in urban horticulture concerning ecology of urban environments is called landscape ecology. Landscape gardens are mini-ecosystems, albeit designed for esthetic reasons. Plants shade each other and compete for water and nutrients. Allelochemicals are exuded from roots and leached from foliage and litter which can have both stimulating and inhibiting effects on other organisms including plants, insects, and microorganisms. Natural system ecologists know and study these interrelationships, but the science of landscape ecology has been left to the practical experience of nurserymen and some landscape architects. Knowledge of ecological principles would seem to be essential in designing landscapes which are functional, with low maintenance requirements, and yet attractive.

Soils and plant nutrition must be represented in any strong academic program in urban horticulture. In many cities, plants are grown in a variety of media, sometimes resembling more closely construction materials than fertile agricultural soils. Heavy-metal accumulation by food plants growing in reclaimed areas and in cities is of continuing concern. Root growth, influence of mycorrhizae, water and nutrient requirements and uptake for plant maintenance, artificial media in planting beds, and use of recycled waste materials are but a few of the foremost problems awaiting

investigation by skilled soil scientists working on problems of urban horticulturists.

The best research goes for naught unless a strong horticultural communication and education section is included. Extension and advisory personnel have served the commercial production industries and to a lesser extent have provided some answers for the gardening public, but the demands require additional increased resources. Subject matter needs to span all aspects of horticulture -- pomology, vegetable and flower crops, and landscape and foliage plants -- ranging from the simple questions of a child to the professional needs of the commercial maintenance industry and the sophisticated plant collector. To reach these diverse audiences, the horticulturist must enlist the aid of specialists in television and other mass media, adult and youth education, media preparation, and program development.

Poets, philosophers, artists, and knowledgeable horticulturists have long extolled the enriching, enobling, and therapeutic virtues of plants and gardening. "Gardeners make good friends" is an old saying. And yet, we continue to talk about ornamental and amenity plants as if landscape plants, parks, and gardens were nice, but not essential and never to serve the same importance as food and fiber crops. It is long past time when the horticulturists should combine forces with the psychologist, the artist, and the landscape architect to quantify in scientific terms the effects that plants have on humans in addition to providing food and substance. Horticultural therapists have used plants in rehabilitation programs for the physically and mentally ill with great success. And there have been reports showing beneficial effects of plants and gardens on social interactions of people, including inner-city ghettos and prisons. But what effects do plants have on people? Is blood pressure lowered? Are blood sugar and serotonin levels changed? What clinical and chemical factors are affected by a beautiful landscape, a wooded park, a flower bed, a geranium on the back step, or a *Ficus* in the office? Is it true that offices and homes are more pleasant with plants? Do office workers accomplish more? Is there less absence from work, and what physiological factors are accounted for in human reactions? It is time to demonstrate conclusively in scientific terms the essentiality of plants and gardening and then to communicate these findings to the general public and to government officials who control research funds.

Because of the diversity of its research problems, urban horticulture must interact with many other disciplines in addition to traditional contacts with botany, chemistry, entomology, plant pathology, and agronomy. For example, the expertise of the urban horticulturist will be needed as landscape architects turn from exclusively ornamental plantings to functional landscapes emphasizing edible plants, energy conservation, low maintenance, and drought and pollution resistance. More attention must be paid to costs and labor of urban gardens, both private and public. Engineering becomes more important as plants are used increasingly to modify wind and temperature and are grown in special containers and restricted areas. The expertise of urban forestry and arboriculture will be helpful in the management of street trees and urban wood lots. Psychology, sociology, rehabilitative medicine, and education are essential in studies of horticultural therapy and other plant/human interactions.

Urban horticulture can work and have an influence on consumer groups involved in organic gardening, composting, urban agriculture, and environmental conservation. Land use and highway planners, urban planners, and architects will also need the advice of urban horticulturists.

Facilities for research in urban horticulture include greenhouses, growth chambers, and laboratories. Research arboreta in which new introductions and new cultivars can be grown, observed, and measured for their suitability to urban areas become more important in contrast to permanent plantings in a display or taxonomic arboretum. Extension specialists will illustrate rooftop, windowbox, and indoor gardens, with requirements for specific slopes, exposures, soil types, and watering techniques, all designed to educate the urban gardener with information developed from research on urban horticulture.

But, there is more to do. The Center for Urban Horticulture with the help of groups like NOHS, is almost half finished with buildings and faculty recruitment. It is time to develop academic programs of research, teaching and public outreach, each of which must have its support. The primary needs of the Center are:

1. Plant Research Facility to grow plants for research and teaching, including greenhouses and controlled environment rooms in which light, temperature, and day length can be closely controlled throughout the year. We need a modern headhouse, in which plants can be potted, treated and harvested, in which specialized apparatus can be built, in which supplies such as root media, pots and fertilizer can be stored. A quality program in horticulture needs such facilities and none are available presently on the campus.
2. Faculty positions in three subject matter areas as described in the original 1980 program plan. First in an additional position in plant materials, to bolster our knowledge of Northwest plants and to make better use of the plant collections in the Washington Park Arboretum and at the Bloedel Reserve. We need a second to investigate how urban plants grow -- a strong research horticulturist. And, third, is a horticultural psychologist to lead research and teaching in the understanding of the beneficial effects of plants on people working in cooperation with landscape architecture and environmental psychology.
3. Endowment funds. All funds to support research, and the public outreach programs must be raised by faculty through competitive grants from outside agencies. This process is costly in time and effort, the University takes a large portion for overhead, and continuity is often lost in favor of financial opportunism. Urban Horticulture needs endowment for students, faculty, and staff, so that we can continue to attract and support the brightest, most committed. We have the pioneer program in the United States, and we must continue to set high standards for ourselves and for others.
4. Research Arboretum, Display, and Demonstration Gardens to teach others how to grow plants in cities. Urban Horticulture needs landscape areas where new and old plants can be grown and observed, tested, and displayed, to demonstrate correct selection, culture, and use of

environmentally tolerant plants for urban gardens. In addition, we should have space in which garden clubs and horticultural organizations can grow specific plants to display the best varieties and cultural methods.

Gardening has been called a "safety valve of society," particularly in the pressure-pot atmosphere of modern cities. The basis of gardening in urban situations is knowledge about plants -- selection, culture, pests, maintenance, and ecology -- which is the mission of the research urban horticulturist. As the world population grows and people are increasingly crowded into dense clusters, the need for understanding growth of plants within cities and the effects of these plants on human beings becomes critical. Thus, the Center for Urban Horticulture has an important mission and an exciting future. NOHS should be proud of what has been accomplished.

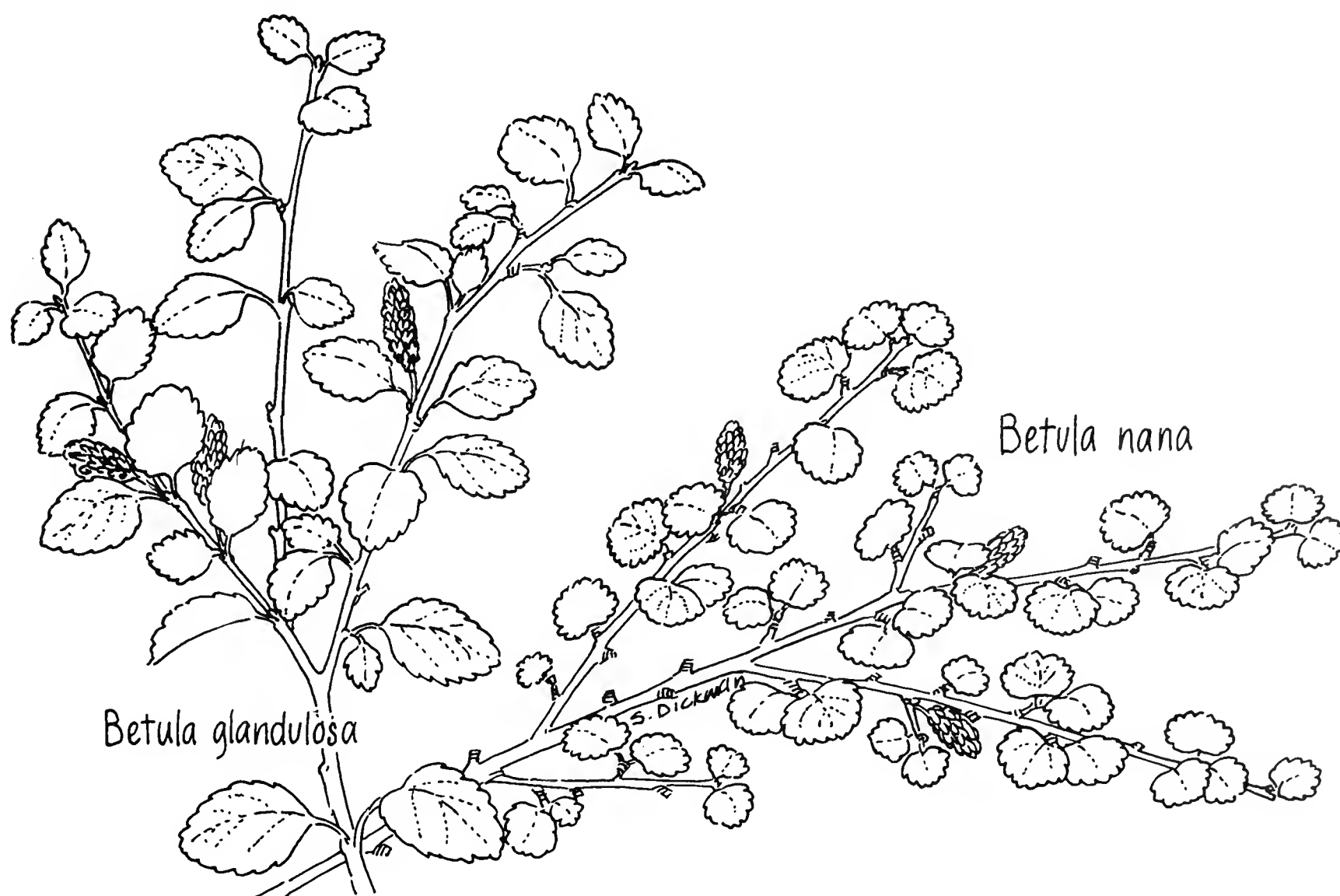


Fig. 9 *Betula glandulosa*
Betula nana
 Sally Dickman

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Message from the Governor

I am delighted to extend my congratulations to the Northwest Horticultural Society (NOHS) on the occasion of its Preview of the Center for Urban Horticulture at the University of Washington.

As the Preview's Honorary Chairman, I commend the NOHS for its dedication to urban landscaping, which can have far-reaching impacts on the physical, social, and economic health of a city. The new Center gives testimony to the untiring efforts of the NOHS to educate the public on the importance of this new scientific field.

You have my very best wishes for an enjoyable Preview celebration and for every success at the new Center for Urban Horticulture.

Sincerely,

A handwritten signature in cursive script that reads "John Spellman".
John Spellman
Governor

BOOK REVIEW: BONSAI--ITS ART, SCIENCE, HISTORY AND PHILOSOPHY, by Deborah R. Koreshoff; Timber Press, Portland, Oregon, 1984; 255 pages; \$39.95.

Deborah Koreshoff has the unique background normally denied a Caucasian and that is to grow up with bonsai culture. Her father was born and lived in Manchuria where he received his bonsai exposure from a Chinese gardener. The author's understanding and appreciation of the oriental art of bonsai is evident in the "Historical Background of Bonsai", as part of her introduction in which she also explains, "What Keeps a Bonsai Small?", "Methods of Obtaining Tree Material", "Methods of Propagating Tree Material" and more.

Bonsai growers should own a copy of the book. They will especially appreciate the 75 pages on the art of bonsai styling. Clear descriptions and detailed sketches are given on how to develop them. The usual rules of design are reinforced by the reasons behind them. More design fundamentals are contained in the last chapter, "Guidelines for Judging", which is the bottom line of design and provides a critical method of determining tree design.

Deborah tells the reader in Chapter Two, "Shaping Techniques", how to develop the various styles by pruning, the sculpture technique, by directing the plant energy and by wiring methods. One quote from the author on shaping a bonsai, I wish to share: "The tree should be thought of as an art medium, for a bonsai is not an exact replica in miniature of a full grown tree in nature, but a stylized model--suggesting the essence of a particular scene rather than presenting a reproduction to scale of the scene itself."

Other subjects covered concerning bonsai care include a good month-by-month activity calendar and the art of saikei. The size of the book (8-1/2" x 12") allows for good, readable print and space for the many good drawings to illustrate techniques.

For those who are not bonsai growers, the book contains a great deal of information on various methods of propagation including air layering and grafting. Suggestions on how to select good material, either from a nursery or from the wilds, applies to the garden as well as bonsai. Pruning and shaping techniques with excellent diagrams are also useful.

As the title suggests, the author does give more of the art and history as well as the science of bonsai than many other books.

Leo Cunningham

Fig. 10 Mosses
Dennis Thompson



ACTUAL SIZE

BOOK REVIEW: THE VICTORIANS AND THEIR FLOWERS, Nicolette Scourse, Editor, Timber Press, Portland, Oregon, 1984, 215 pp, 17 color illustrations, 82 black and white; price \$22.95

For the garden historian and trivia buff, this text offers a random selection of information on gardens, gardeners, botanists and publications; taxonomy and floral lore; philosophy and morality. England has produced many superior garden history books by Gorer, Healey, Strong, Coats, Howe, Whittle and others in the past few decades. Unfortunately, this book is more an extensive collection of notes than a developed piece of prose. Much of the information is fragmented into several chapters (i.e., a brief biographic sketch of Robert Dick is accompanied by two large portraits in Chapter 2, but with no information as to its importance). At the end of Chapter 5, the base information is accompanied by six quarter-page, black-and-white photographs of pressed botanical specimens that he collected. Unfortunately, these illustrations do not seem to relate to the text either.

This is one of the first books I can remember that seems to use an excess of illustrations simply as filler. Many illustrations seen frequently in color (The Temple of Flora tulips and engravings from The Florist Cabinet) are reproduced in a very inferior form of black and white. It is a case where less would have been more. There are some glaring errors like captions for the wrong pictures, pictures printed upside-down, incomplete parenthesis and similar proofing errors. Chapters entitled Eighteenth-century Origins, Mirrors of Victorian Society, Sentiment, Morality, Botanical Fashion, Foreign Exotics, Realities, The Passion for Detail and Scientific Controversy drudge forward with the vitality of a typical Victorian novel or allegory.

Despite a scattered, ill-planned and edited presentation, the text does offer a collection of notes on little-known floral and moral Victoriana, well worth the cost to the enthusiast.

Dennis Thompson



Fig. 11 Lysichitum
americanum
Sally Dickman

BOOK REVIEW: THE NEW WILDFLOWERS AND HOW TO GROW THEM, Edwin Steffek,
Timber Press, 200 pages, 100 illustrations; Price: \$22.95

Edwin Steffek, a New England horticulturist, has written several books and has been an editor of several horticultural magazines. This book is an expanded version of a 1952 edition; the number of species on which it comments has been increased from 350 to 560. The geographic areas it attempts to cover encompass the entire United States. Therein lies its problem, for it tries to do too much, becomes too general and, as a result, does not appear to be of any great help to either the novice or to the experienced gardener.

Specifically----

*Each different species is described, but the descriptions are not detailed enough to identify the plant if the reader is not already acquainted with it. Some descriptions are inaccurate.

*The cultural directions are much too general for the novice gardener to provide assurance of minimal success. For instance, a popular reference on rhododendrons provides a chapter of forty pages on the culture of this genus but, in Mr. Steffek's book, only one-third of a page is given to cultural practices.

*There is a bias toward plants native to the eastern U.S. Many of them are referred to in the text by their common names--names not common elsewhere. If you are growing them in this area, it is necessary to refer to the indexed lists for the scientific name.

*Of the 100 illustrations, 48 are in color and are quite good, while the other 52 are in black and white and are not very helpful.

Edwin Steffek is undoubtedly a horticulturist of considerable experience. He furnishes an excellent discussion on the conservation and protection of rare and endangered plants, plus a good many useful cultural tips and suggestions throughout the book. But he has set too ambitious a task for 200 pages and, in this case, he has unfortunately fallen short.

John Putnam



Fig. 12 Viola hallii

Dennis Thompson

Editorial Staff
(For this special issue)

Horticulture Northwest, Volume 11, Number 3, Fall 1984

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It is with deep appreciation that we acknowledge the following people for taking time out of their busy schedules to share their memories of this history and/or to contribute articles to Horticulture Northwest. They all played important roles in the development of the Center for Urban Horticulture and they must be included in this celebration:

Dr. George M. Beckmann

Dr. Richard A. Howard

Dr. Phillip W. Cartwright

Mr. Brian O. Mulligan

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Dr. Stanton E. Schmid

Mr. Ernest M. Conrad

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A special acknowledgement must go to Dr. Harold B. Tukey, Jr., whose boundless energy, enthusiasm and good humor made the publication of this issue a memorable experience. He assisted in every way, including reading and proofing manuscripts, and made his fine staff available to us whenever needed. Thank you. Editor.

Botanical drawings are credited individually.

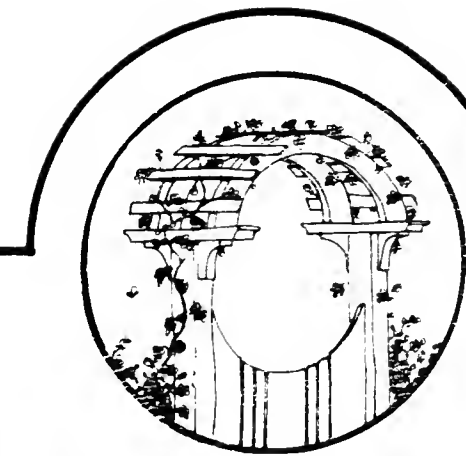
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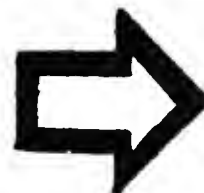
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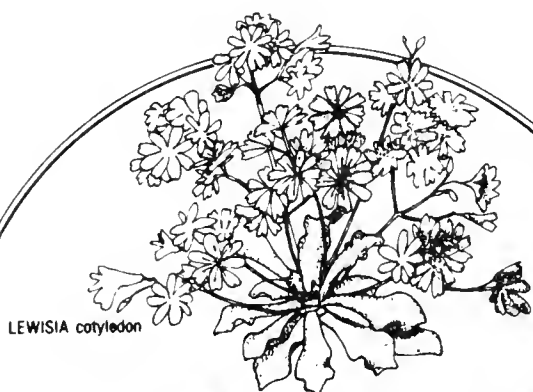
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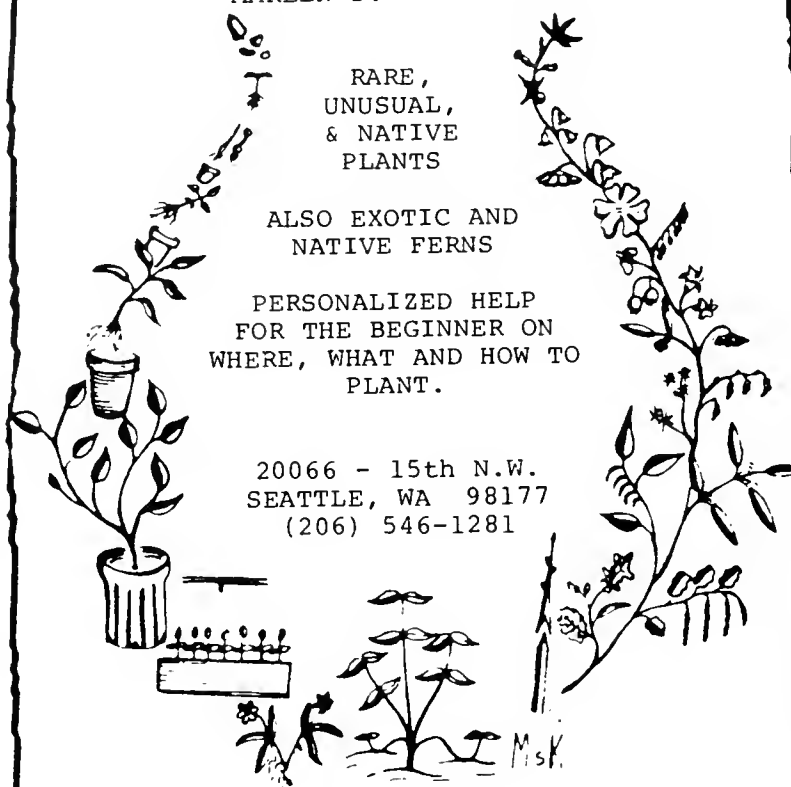
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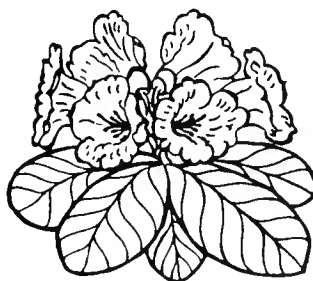


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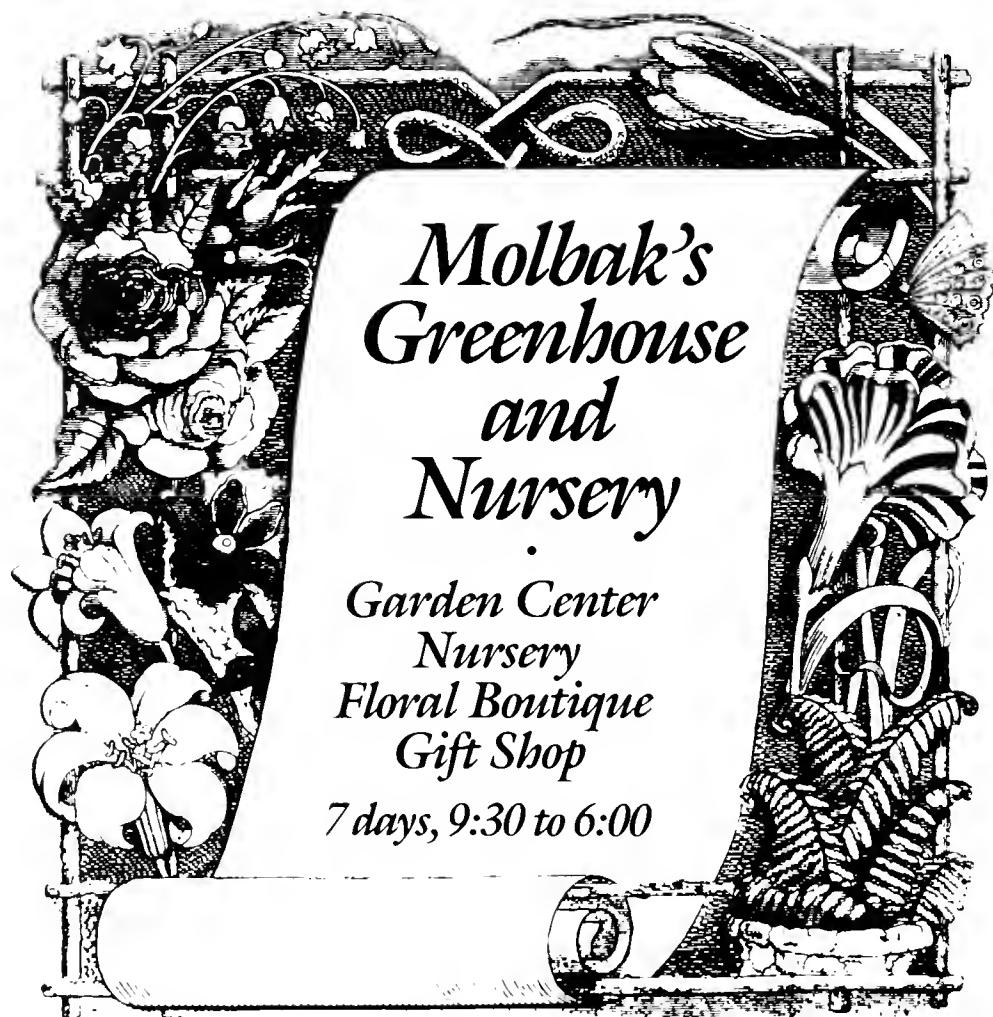
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Horticulture Northwest

Volume 11

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